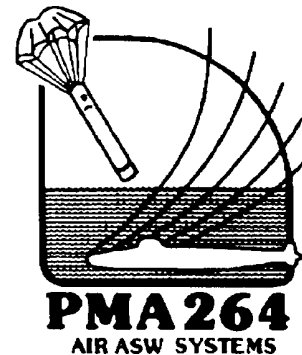
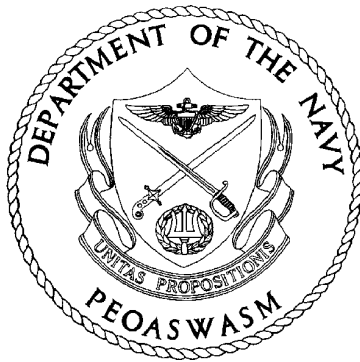


Unrestricted Web Version

Sonobuoy Liaison Working Group



Program Executive Office, Air ASW, Assault
and Special Mission(PEOASWASM)
programs (PMA-264)

2 - 5 May 2000

SLWG Agenda

Executive Committee Meeting

- 02 May 2000

<u>Time</u>	<u>Subject</u>	<u>Presenter</u>
– 0900	Convene	(NSWCC)
– 0915	NCEA / NNOR	(N880E1B)
– 1015	Break	
– 1030	Programmatic Issues	(PMA-264B)
– 1130	Lunch	
– 1230	Recent Prosecutions	(AAMPO)
– 1300	Sonobuoy Review Team	(NSWCC)
– 1345	CAIMS / OSE	(NALC)
– 1400	Open Discussion	
– 1430+	Adjourn	

SLWG Agenda

Open Session

- **03 May 2000**
 - **0900: Convene ***
 - **0915: Action Item Review ***
 - **0945: NCEA/NNOR ***
 - **1045: Break**
 - **1100: Program Brief ***
 - **1200: Lunch**
 - **1300: NALC Brief**
 - **1345: Break**
 - **1400: ROLMS/AIT**
 - **1430: PACFLT Brief**
 - **1445: Shear Currents**
 - **1500: Break**
 - **1515: Action Item/Discussion**
 - **1600: Adjourn**
 - **04 May 2000**
 - **0900: Convene**
 - **0920: Fleet Action Items**
 - **0930: Logistics**
 - **1015: Break**
 - **1030: SUS IETM**
 - **1045: PSS/SERC/Engineering**
 - **1115: Break**
 - **1130: EMATT Brief**
 - **1200: Action Item Wrap-up**
 - **1245+: Adjourn**
- * Government Only**

SLWG Charter

- Chartered to coordinate and review technical, logistics, and inventory management issues regarding sonobuoys. Scope includes, but not limited to:
 - Inventory requirements and issues re: NNOR, NCER, NCEA;
 - Resolution of inventory management problems;
 - Review technical initiatives and ECP's to assess impact on Fleet operations and stockpiles;
 - Assess impact of sonobuoy changes to ASW aircraft, TSC, ASWM, trainers and logistics support; and
 - Recommend changes to production plans, inventory management processes, and logistics support which will increase the efficiency and effectiveness of the sonobuoy program.

SLWG Membership

- | | | |
|---|---|----------|
| • PMA-264 | Program Management | Co-Chair |
| • N880E | OPNAV | Co-Chair |
| • NSWCC | Logistics | Member |
| • NALC | Inventory Management | Member |
| • CLF, CPF & CNE | CINC Interface | Members |
| • CNAL & CNAP | Fleet Air Interface | Members |
| • CPRFP & CPRFL | VP Fleet Interface | Members |
| • CHSWP & CHSWL | HS Fleet Interface | Members |
| • CHSLWL & CHSLWP | HSL Fleet Interface | Members |
| • + Others as invited (PM's, SPAWAR, etc) | | |
| • Members Responsibilities: | Provide representation at the policy making level; present emergent concerns for action; research issues and prepare technical positions with supporting data; provide position of represented group during discussions and voting; review and provide inputs to meeting minutes. | |

Action Item Review

- ITEM 98-03: CAIMS / ATR PROCESS
 - Executive Committee: Errors in CAIMS directly affects procurement
 - Garbage in - Garbage out
 - ROLMS reporting difficulties
 - Little faith in CAIMS inventory numbers
 - Expenditures not reported
 - Need for World-Wide Inventory?
 - Assigned to PMA264, NALC, NSWCC
 - Status: **ONGOING**: Crane Sonobuoy Management Review Team chartered by CAIMS/ATR Working Subcommittee to reconcile Fleet activities in CAIMS and establish effective ROLMS reporting. Assist visits continue through FY 00. NALC developing end-user level ROLMS training for distribution late this year (brief at Spring 2000 SLWG).

Action Item Review

- ITEM 99-04: FFT SHIPMENTS CAUSING INTRANSITS
 - AMMOPAC: FFT reporting causing intransits
 - Defense Depot ships material FFT through a FISC
 - FISC does not receipt & issue material to final destination
 - Causes intransit when final destination receipts
 - Establish receipt/issue policy at transshipping activities (FISC)
 - Assigned to NALC
 - Status: **CLOSED**: NALC: FFT material is not supposed to be receipted by transshipping activity. The AMMO's must load the final destination into the supplementary address field, not the FFT activity's address. AMMO's have been instructed in the correct process.

Action Item Review

- ITEM 99-05: CAIMS INACCURATE FOR DDJC & DDNV
 - AMMOPAC/AMMOLANT: CAIMS does not reflect accurate account for the Defense Depots
 - AMMO's source requisitions at DD's due CAIMS shows material avail
 - DD's deny requisition with 'A6A' because material not avail
 - Obvious that an Out-of-Balance condition exists when this occurs
 - NALC action is required when this occurs
 - Assigned to NALC
 - Status: **OPEN**: NALC: The Defense Depot's DSS system is somewhat incompatible with CAIMS. Action is being taken to move stock out of DDJC (to FISC San Diego). FISC San Diego and DDNV are slated to become ROLMS reporters into CAIMS. Brief status at next (Fall 2000) session of SLWG.

Action Item Review

- ITEM 99-06: 'Y' TRANSACTION DELETION
 - Membership: Requirement for 'Y' transaction should be deleted
 - 'Y' Transactions report failures
 - NALC has removed reporting requirement from policy Docs
 - Field still exists in CAIMS and ROLMS
 - CCR to change CAIMS and ROLMS needs to be submitted
 - Assigned to NALC
 - Status: **CLOSED**: NALC: The 'Y' Transaction reporting requirement is no longer valid. NALC 272200Z APR 00 applies. Customer Change Request (CCR) has been submitted to remove fields from CAIMS and ROLMS.

Action Item Review

- ITEM 99-07: AMAR INSPECTION FOR SONOBUOYS
 - Membership: Sonobuoy stocks are not inspected during AMAR's
 - AMAR = Ammo Management Accountability Review (Done by NALC)
 - Sonobuoy inventory management is not inspected during an AMAR
 - Sonobuoys should be included in AMAR's
 - Assigned to NALC
 - Status: **CLOSED**: NALC: AMAR is designed to inspect Weapons Departments and Weapons Stations. Sonobuoy stockpiles are not included in AMAR's unless sonobuoys are a part of the inspected Weapons Department's inventory. End-user (PATWING Det, etc) stocks are not inspected when AMAR visits a site.

Action Item Review

- ITEM 99-08: BG3 REQUIREMENT FOR SHIPS IN PORT
 - CPF: BG3 (PLR) report requirement for ships in port is not needed
 - Ships offload ordnance prior to in port period
 - PLR (BG3) report requirement puts undo hardship on crew
 - BG3 report not useful from ship while in port
 - BG3 requirement needs to be removed for ships in port
 - Assigned to NALC
 - Status: **CLOSED**: NALC: No provision for excluding MCC 'K' PLR requirement exists for ships in port. IM does not know which ships are in port. NSWCC: ROLMS automatically generates BG3 report at beginning of each month, no hardship on crew if ROLMS is used correctly.

New Action Item

- ITEM 00-01: SONOBUOY PLR (BG3) REQUIREMENT
 - NSWCC: Periodic Lot Reports are required for sonobuoys at this time
 - PLR was once required due size of inventory vs usage
 - Required to indicate age stratification of stockpile
 - Stockpile has reduced to the point where the inventory is completely replaced every 2 - 3 years, making PLR unneeded
 - Rescind PLR requirement for sonobuoys
 - Assigned to _____
 - Status: **OPEN**: NSWCC: The need for PLR (BG3) for sonobuoys has been negated by the shrinking inventory. We use the buoys at a rate that insures most types will be used prior to going over age. NSWCC suggests that PLR requirement be dropped. Discussion.
 - Closing Status: _____

Action Item Review

- ITEM 99-09: HOST LEVEL REPORTING
 - CNRFL: Feasibility of Weapons Departments providing host-level reporting for attached squadrons at Naval Air Stations
 - Host-level reporting would reduce number of reporters
 - Fewer reporters = fewer chances for ATR mistakes
 - Weapons Departments have more experience in ROLMS/ATR reporting & had onsite install and training by ROLMS program
 - Determine feasibility of establishing host-level reporting for Squadrons and Wings at applicable Air Stations
 - Assigned to CPRFL, CNAL
 - Status: **ONGOING**: NSWCC: Establishment of host-level reporting is underway in PACFLT sites. Establishment at LANTFLT sites to be determined. CPRFP to brief lessons learned for host-level reporting at MCBH Kaneohe Bay at Spring 2000 session of SLWG. Status to be briefed at next session.

Action Item Review

- ITEMS 99-02, 99-11, & 99-12: (Consolidated)
 - ROLMS TRAINING SHORTFALLS
 - Membership: ROLMS training insufficient to meet Fleet requirements
 - NALC only fully supports ROLMS at major sites (e.g., WEPSTA, Weps Depts)
 - Small end-users are not supported other than ROLMS trouble desk & ROLMS CD tutorial
 - Existing Ammo Management School ROLMS curriculum inadequate
 - Establish effective ROLMS training!
 - Assigned to NALC
 - Status: **ONGOING**: NALC: Certain ROLMS training initiatives are underway. NALC to brief status at Spring 2000 session. NALC to brief status at Fall 2000 session of SLWG. NSWCC: ROLMS training conducted at sites visited by Sonobuoy Management Review Team, ongoing.

Action Item Review

- ITEM 99-13: ROLMS AIT SYSTEM
 - PMA-264B: What is cost/configuration of ROLMS AIT system for sonobuoy sites; what are requirements?
 - How many sites need a ROLMS AIT system
 - What is configuration, cost of system
 - Feasibility of funding procurement
 - Assigned to NSWCC
 - Status: **ONGOING**: PMA-264 is funding the procurement of the ROLMS AIT system (e.g., scanners, software, bar code printers, etc) for distribution to certain end-user sonobuoy sites not supported by the NALC ROLMS office. NSWCC will install & train upon availability of ROLMS software. Equipment is on order. Plan to be briefed at Spring 2000 session of SLWG.

New Action Item

- ITEM 00-02: LOAD PLAN SCRUB
 - CNAL: Current sonobuoy inventories will not support Load Plans
 - Shore Station Load Plans and Ship Fill Allowances need to be scrubbed to better reflect reality of available sonobuoy stockpile
 - Assigned to _____
 - Status: **OPEN**: Discussion.
 - Closing Status: _____

Sonobuoy NCEA / NNOR

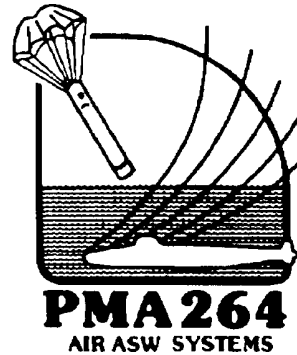
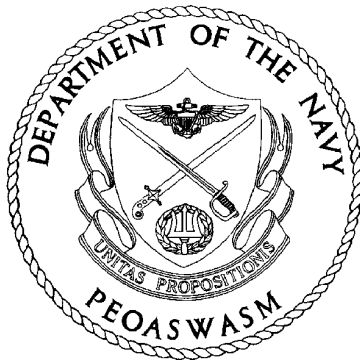


Chief of Naval Operations
Director, Naval Air Warfare (N88)

N088E1B

2 - 5 May 2000

Sonobuoy Program



Program Executive Office, Air ASW, Assault
and Special Mission(PEOASWASM)
programs (PMA-264)

2 - 5 May 2000

Presentation Handout is UNCLASSIFIED

Air ASW Systems Program Overview for SLWG

PMA-264B

PMA-264B3

PMA-264C

Class Desk

2-4 May 2000

Production Sonobuoys

- Requirements
- Functional Roadmaps

Procurement Drivers

- **Non-Combat Expenditure Allocation (NCEA)**
 - Represents peacetime utilization:
 - Generated from fleet CINCS requirements
 - Function of: peacetime training and readiness
 - Operations
 - Training
 - Exercises
 - Testing
 - Future plans for x - x K per year
 - Expend from stock on hand. Replace with annual procurement.
- **Non-Nuclear Ordnance Requirement (NNOR)**
 - Wartime requirement
 - Generated by: N81 with CINC representation
 - Function of: ASW A/C force levels and A/C operating rate
 - Provides inventory objective

Sonobuoy Requirements Issues

- **NNOR Review**
 - Required annually
 - Load Plan and NNOR disconnects
- **NCEA**
 - **Outyear Plans**
- **Outyear Funding**
 - POM 02 Issues
- **Sonobuoy Inventory and Reporting Accuracy**
 - Critical Issue to requirements and acquisition

NNOR Status

- **NNOR Review**
 - Review Annually ICW SLWG
 - PR-01 Scrubbed Post S-3 Expenditures
 - POM 02 Scrubbed Shipfill
- **NNOR vs LOAD Plans**
 - Significant Disconnects
 - NNOR is the Navy's total requirement
 - Global Load plans should match the NNOR
 - Needs Resolution
 - NALC and CinC's

Inventory Accuracy

- Three Focused Areas of Action
 - Reconciliation and Training
 - NSWCC Crane Assist Team
 - > x units (\$xM) found as unreported expenditures
 - Feedback and Oversight
 - NALC Feedback
 - ISIC and TYCOM Oversight
 - AIT Upgrades
 - PMA264 funding upgrades for sonobuoy reporters not covered under NALC program
 - Fall 2000 Deliveries

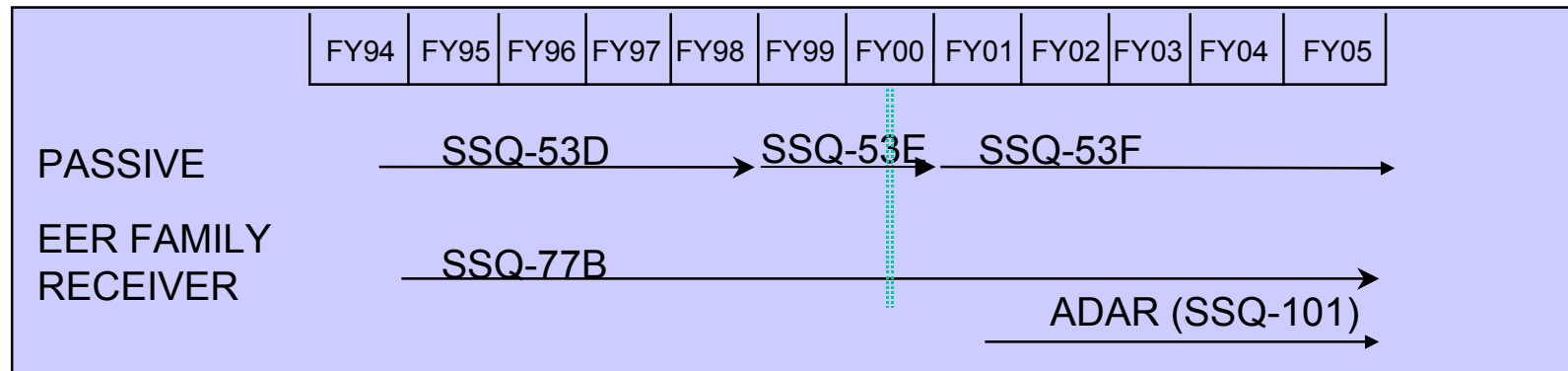
Sonobuoy Master Plan

	SSQ-36B	SSQ-53E	SSQ-57C/53F	SSQ-62E	SSQ-77B	SSQ-101	SSQ-110A	SSQ-110B
Size	A	A	A	A	A	A	A	A
Life (HRS)	12 Min.	0.5,1,2,4,8	0.5,1,2,4,8	1	1,4,8	6	6	6
RF Channels	99	99 (Note 1)	99 (Note 1)	99 (Notes 1, 2)	99	48 (Note 3)	99	99 (Note 1)
Depth (FEET)	2640	90,200,400, 1000	90,200,400, 1000 CO calibrated for 90,200,400 only	Shallow Family (50,150,300) Deep Family (90,400,1500)	500,1000	65,300,500	CLASSIFIED TWO DEPTHS	CLASSIFIED FOUR DEPTHS
Electronic Function Select (EFS)	RF CH	RF CH Life Depth Mod Input (DIFAR/CSO) AGC Mode (Note 4)	RF CH Life Depth Mod Input (DIFAR/CSO/CO) AGC Mode (Note 4)	RF CH Depth Family	RF CH Life Beam Pattern (BB/CZ) Depth	RF CH Depth Acoustic Band	RF CH	RF CH
Command Function Select (CFS)	N/A	RF CH RF ON/OFF Life Mod Input (DIFAR/CSO) AGC Mode (Note 4)	RF CH RF ON/OFF Life Mod Input (DIFAR/CSO/CO) AGC Mode (Note 4)	RF CH RF ON/OFF Depth Sonic Channel	N/A	RF CH RF ON/OFF Sonic Response Processing Mode Scuttle	N/A	RF CH Depth
Command Signal Generator (CSG)	N/A	N/A	N/A	Ping Depth Scuttle	N/A	N/A	Ping Depth Scuttle	Ping Depth Scuttle
Fleet Introduction	In Fleet use	In Fleet use	FY-01 1 st Quarter	FY-00 3rd Quarter	In Fleet use	FY-01 1 st Quarter	In Fleet Use	FY-02 2 nd Quarter

NOTES:

- (1) RF Channels 57, 58, and 93 are not used.
- (2) Sonar Channel selected by default via EFS as in the SSQ-62D.
- (3) See Specification for RF channels.
- (4) AGC Mode is OFF, Slow, Fast

Passive Sonobuoy Roadmap



SSQ-53D

Improved low frequency

SSQ-77B

EER receiver

Selectable beam

- Horizontal
- Vertical

SSQ-53E

Tactical flexibility

- Selectable AGC
- CFS
- Constant shallow omni

SSQ-57C/53F

Tactical flexibility

- Selectable AGC
- CFS
- Constant shallow omni
- Calibrated Omni

ADAR (SSQ-101)

IEER receiver

Shallow water

- Horizontal directivity
- Selectable depth

Speed denial

- Passive broadband

Tactical flexibility

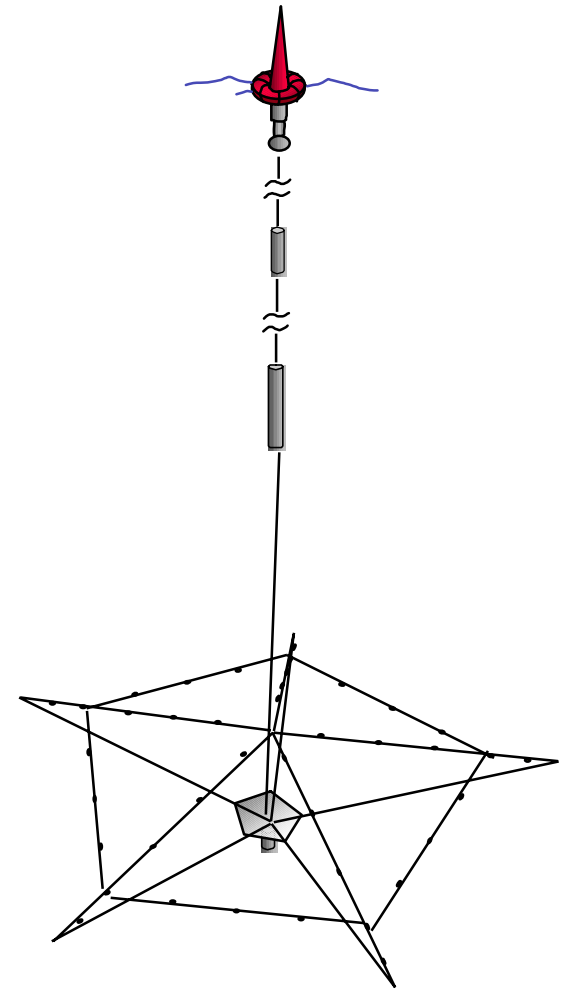
- CFS

Passive Sonobuoy Program

- **SSQ-53E**
 - Improves tactical flexibility
 - Improves logistics
 - Improved hydro-mechanical and transient self noise performance
- **SSQ-53F**
 - Incorporate functions of SSQ-57 under FY-99 SSQ-57 ECP
- **Future**
 - Incorporate some functions of SSQ-77
 - Performance Trade Offs
 - Is VLAD BB Beam still required?
 - PMA-264 Msg DTG 180900Z May 00 solicits formal feedback
 - Can lower cost and provide xdb improvement in horizontal beam for passive and EER if BB beam is removed from VLAD requirement.

SSQ-101/ADAR

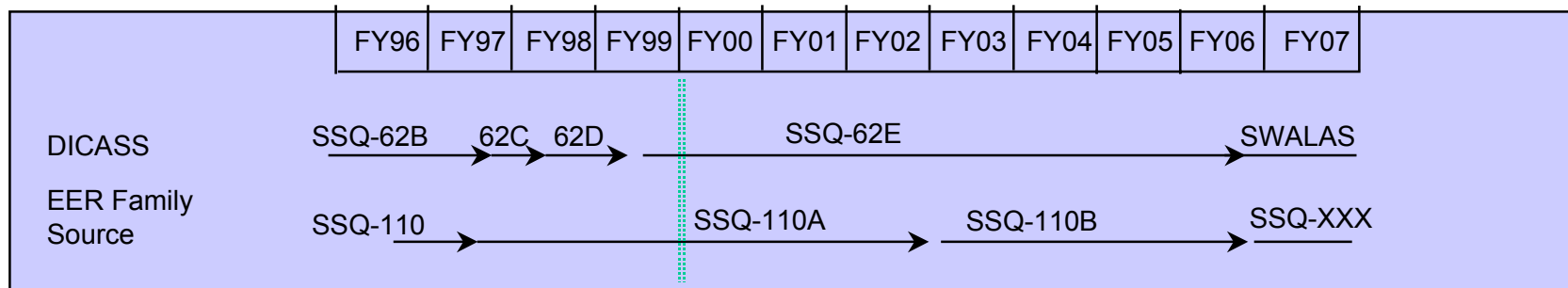
- A-size sonobuoy
- Horizontal planar array
- EFS equipped
- 3 operating depths
- 2 frequency bands
- Can receive UHF commands from aircraft via CFS
- Transmits beamformed digital data to aircraft
- Limited broadband passive capability



Active Sonobuoy Program

- SSQ-62E ECP
 - Improved tactical flexibility
 - Improve logistics
- SSQ-62 future improvements
 - Will be thermal battery or other acceptable non-hazardous power source
 - Source level CFS selectable (possible shallow water improvement)
 - Increased source level (compared to SSQ-62E)
 - No funding identified for the above efforts

Active Sonobuoy Roadmap



SSQ-62B

Added mid depth

SSQ-62C

Detection range

- Increased depth
- CCM
- 99 Channel EFS
- TX Power increase (.25 TO 1.0 WATT)

SSQ-62D

Tactical flexibility

- Shallow/deep depth families

SSQ-62E

Tactical flexibility

- 4 acoustic freq in 1 buoy
- CFS VHF & acoustic CH CHG

SWALAS

Shallow water

- Acoustic IMP
- MAD IMP

SSQ-110

EER Source
Water depth >400M
Single depth
31 channel RF

SSQ-110A

IEER Source
Water depth >20M
Two depths
99 channel RF

SSQ-110B

Electronic
S&A
Improved beam pattern

SSQ-XXX

AEER Source
Improved shallow water
•Air deployable low frequency projector

LWSS

Chaff size for Helo



Air ASW R&D Programs Briefing to Fleet ASWIP

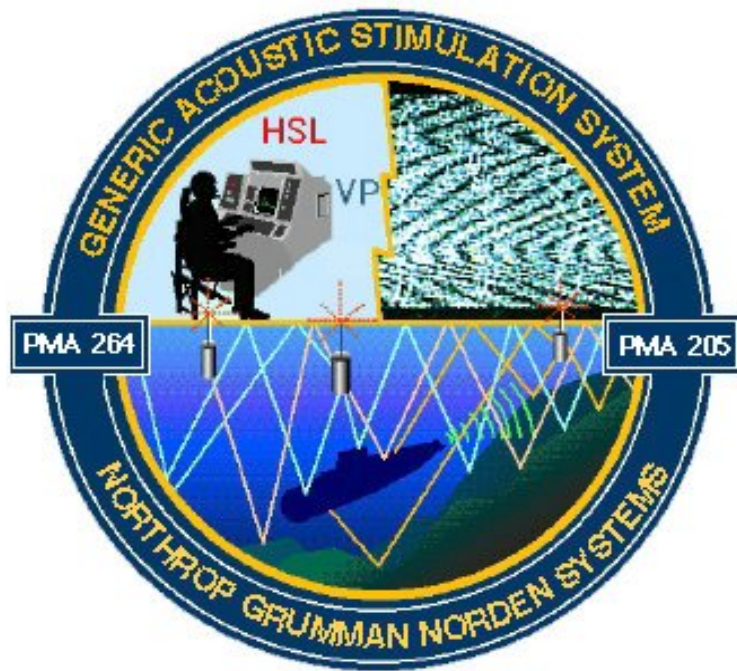
PMA-264C

26 April 2000

Agenda

- Near term ASW Capabilities
- R&D Transition Programs
- Software --- “move toward COTS”

Generic Acoustic Stimulation System (GASS)



- Major acoustic upgrade to the Air ASW trainers
- Increased fidelity - realistic real-time range dependent sensor, target, and ocean modeling
- Passive and multi-static active acoustics in deep and shallow water environments
- Seamless transition across wide operating envelope
- Based on Navy standard models and databases
- COTS hardware and software
- Open architecture supports minimal cost incorporation of new Air ASW sonobuoys and sensors
- HLA compliance - identifying interface standards

ADAR Horizontal Planar Array



Safety Feature Enhancements

◆ Explosive Materials

- No primary explosives as in the 110A

◆ Electrical Initiation, High Voltage

- Slapper detonators permit use of an in-line Electronic Safety and Arming Device
Requires a precisely controlled release of high voltage energy

◆ Seawater Battery

- Sonobuoy must be submerged in salt water to energize the power source
- Battery will degrade within hours to below the minimum level that will fire the initiators

◆ Interlock Switch/Arming Delay

- Senses payload release and initial deployment preventing arming until separation occurs
- Arming is delayed until sufficient time for full array deployment

◆ Bleed Down Resistor

- Placed across charging capacitors in case the unit fails to detonate so the voltage will discharge within 2 minutes rendering that payload unexplodable.

◆ Command Structure

- Unique consecutive command sequence to release, arm, and detonate each payload

◆ Tertiary Scuttle

- Reduced from 12 hrs. to 9 hrs

Environmental Assessment

- **Deep Water Assessment** - Approved March 1995
- **Restrictions:**
 - 50 NM from US and Canadian shores
 - Greater than 200 meters depth
 - 50 NM from established marine mammal sanctuaries and known marine mammal breeding areas
 - 100 NM from the equator
- **Shallow Water Assessment - In progress**
 - Allows testing to 40m depth and 12NM range
 - Potential Sites:
 - East Coast --VACAPES, Salmon Moor Site, Onslow Bay
 - West Coast -- Stonewall/Heceta Bank, SOCAL

GPS in Sonobuoys

CNA Conclusions

- Priority of importance for GPS contribution
 - Highest: Buoys used for EER/IEER/AEER
 - Medium: Active localization
 - Lowest: Ambient noise, BT
- Probably of most value in littoral water due to severe and unpredictable buoy drift
- Allows coordination with other platforms
- Modest cost saving due to improved performance and altered mission profiles
- Marginal benefits unless fully integrated onboard aircraft
- Fleet is enthusiastic about possibilities

OSD C3I JPO Policy

“ All combat, combat support, and combat service support equipment using GPS must use PPS (Military Code)”

DoD GPS security policy requires PPS-capable receivers operating in PPS mode for systems used for:

- Combat
- Combat Support
- Combat service support missions

Waiver process is administered by OSD (C3I) but approval is reported to be difficult to obtain

Software Development

PMA-264 is the Air ASW acoustic processing SSA for the Fleet

- Passive and active acoustic signal processing for the AN/UYS-1
- Passive and active acoustic signal processing targeting SH-60 and P-3 COTS processors

We develop the new capabilities that are introduced to the fleet via software upgrades



PEO(A) USW Common Processing Initiative Briefing to Fleet ASWIP

PMA-264C4

26 April 2000

Software Development

PMA-264 is the Air ASW acoustic processing SSA for the Fleet

- Passive and active acoustic signal processing for the AN/UYS-1
- Passive and active acoustic signal processing targeting SH-60 and P-3 COTS processors

We develop the new capabilities that are introduced to the fleet via software upgrades

COTS Processor vs Common Processing

- PMA-290 and PMA-299 are putting COTS-based processors on their platforms
- Common processing initiative in PEO(A) is seeking an efficient process to introduce ASW capabilities into fleet aircraft

P-3C USQ-78B

- Replaces AN/USQ-78A mil-spec & obsolete parts
- Removes AN/UYS-1; replaces w/ COTS analyzer sub-unit (ASU) within the AN/USQ-78A chassis
- Lockheed-Martin, Manassas lead; Boeing sub
- ASU EMD configuration includes 2 6U VME cards with 6 SHARC DSP's and 2 603e Power PC's each
- Solaris & MCOS operating systems; C, C++, assembly code

SH-60R

COTS Acoustic Processor

- AN/UYS-2 Replacement for ALFS and Sonobuoy processing
- Lockheed-Martin, Owego lead; L-3/CDC/DSR Team
- 4 Motorola 750 Power PC processors; VME 64 backplane
- VxWorks Operating System; C++ Software

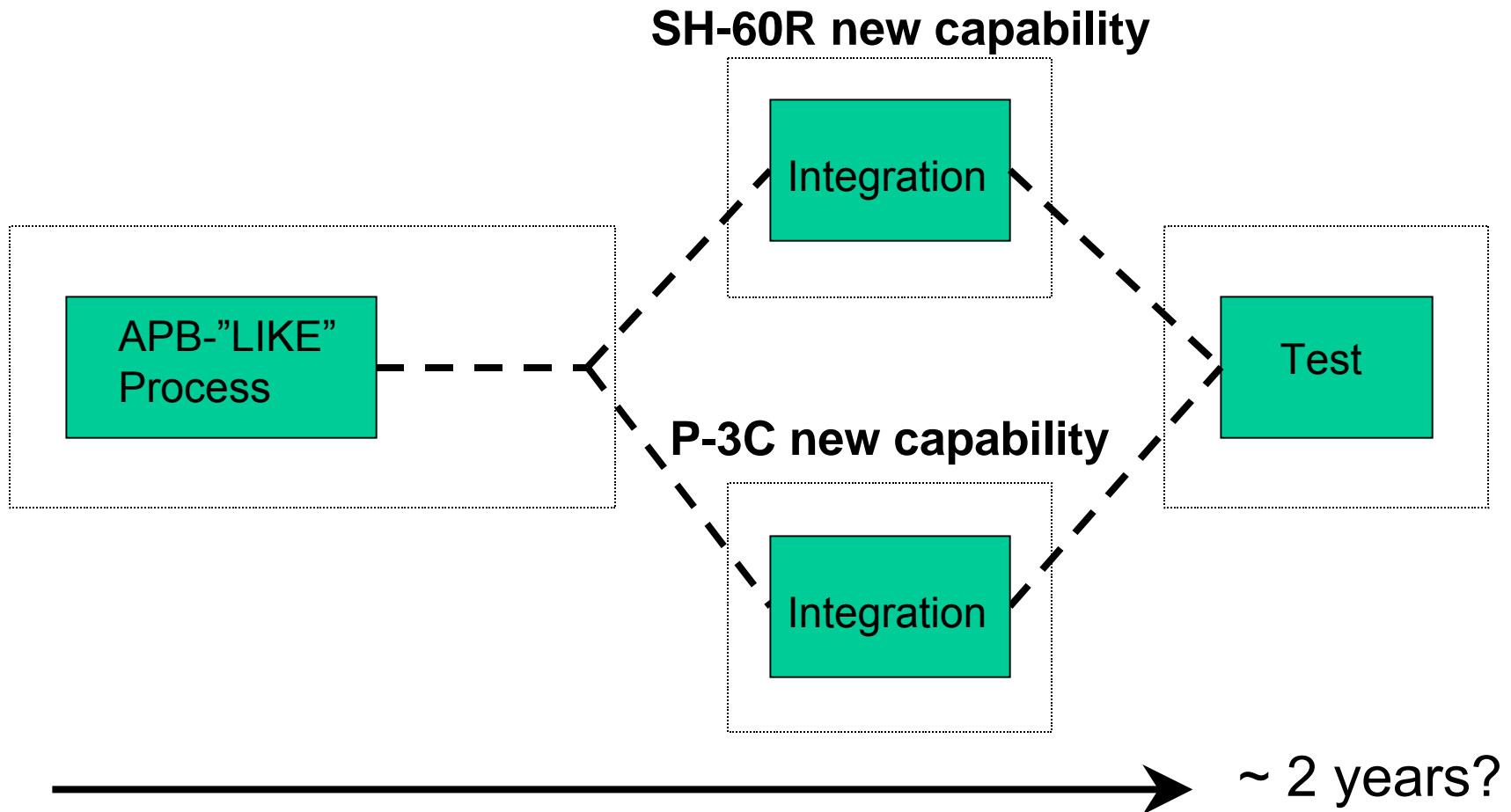
Common Processing Purpose

- Provide a path for introducing airborne USW sensors systems into the fleet using commercial-off-the-shelf (COTS) processors at minimum cost

SH-60R COTS AP Acquisition

- P-3C BMUP COTS signal processor hardware does not meet SH-60R environmental requirements
- P-3C BMUP software is not reusable by the SH-60R COTS Acoustic Processor (AP)
- A perfectly acceptable solution for the P-3C provided no leverage for the SH-60R

Hypothetical New Capability Development



Common Processing Strategy

- Create and maintain common Air USW system specifications and high-level design
- Establish a Common Processing software development and prototyping environment
- Converge toward common hardware architecture
- Cooperate intentionally -- enhanced communication

Status

- Established Air USW Common Processing “IPT”
 - Drafted Common Air Acoustic Processing Specification
 - Included P-3C functions in SH-60R COTS AP contract
- PMA-264 is building a S/W development and prototyping environment, including Air USW Processor flyable H/W
- Accounting for COTS lessons learned, including NAVSEA COTS insertion programs

Near-term Goals and Objectives

- Develop SH-60R acoustic processing that includes P-3C functionality
- Complete rapid S/W prototyping and development capability, including flyable H/W
- Leverage existing ACAP SSA for Common Processing S/W on COTS H/W
- Continue AN/USQ-78(V) Upgrade acquisition planning using Common Processing principles
- Achieve common acquisition/business model with NAVSEA programs

Coordination with NAVSEA

- Leverage the Navy's investment in the more mature NAVSEA COTS processes?
- Combined "IPT"
- Account for the specific Air hardware environmental requirements
 - Salt fog
 - Temperature

Longer-term Goals and Objectives

- Develop a non-proprietary COTS-based acoustic processing code stream
- Expand Common Processing to non-acoustic sensors, for example IR mode W
- Replace legacy AN/UYS-1 and AN/UYS-2 logical interfaces with a common interface
- Include display & control systems in the vision

Conclusion

- These are our initial steps toward common processing
- More to come

GPS in Sonobuoys

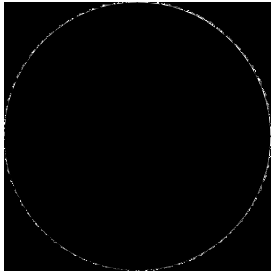
Objectives

- Determine value-added to the air ASW mission resulting from incorporating GPS in sonobuoys
- Develop technical approach for implementing GPS in sonobuoys and uplinking the data to the ASW aircraft
- Analyze costs involved in the integration of GPS
- Develop an approach for integration of GPS sonobuoys into the P-3C and analyze the costs associated with this integration

CAIMS Brief

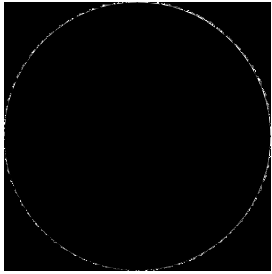


Naval Ammunition Logistics Center
(NALC) Mechanicsburg, PA



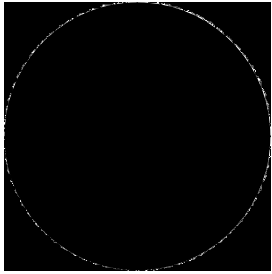
SONOBUOYS





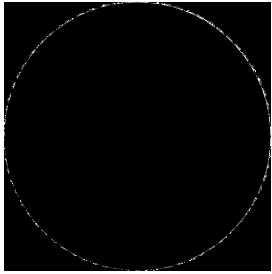
OUTLINE

- COMMON ROLMS/ATR ERRORS
- NALC ORGANIZATION (MOST EFFICIENT ORGANIZATION)
- NALC POINTS OF CONTACT
- CAIMS OSE (OPEN SYSTEMS ENVIRONMENT)
- CAIMS OSE SCREENS
- NALC WEB PUBLICATIONS
- NALC SIPERNET WEBSITE



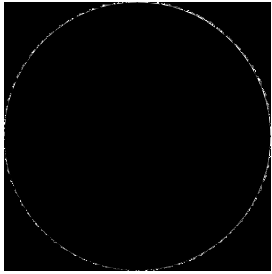
Common ROLMS / ATR Errors

- 31/32 Error Codes: Issue/Receipt to a non-reporter.
 - Must reverse original transaction out of ROLMS and re-submit transaction with a valid reporter in the supplementary address.
- Offline Manipulation: Submit an offline manipulated ATR to CAIMS.
 - **THIS SHOULD NEVER BE DONE.** When manipulation takes place ROLMS and CAIMS ATR's do not match. Human intervention must take place to correct errors.



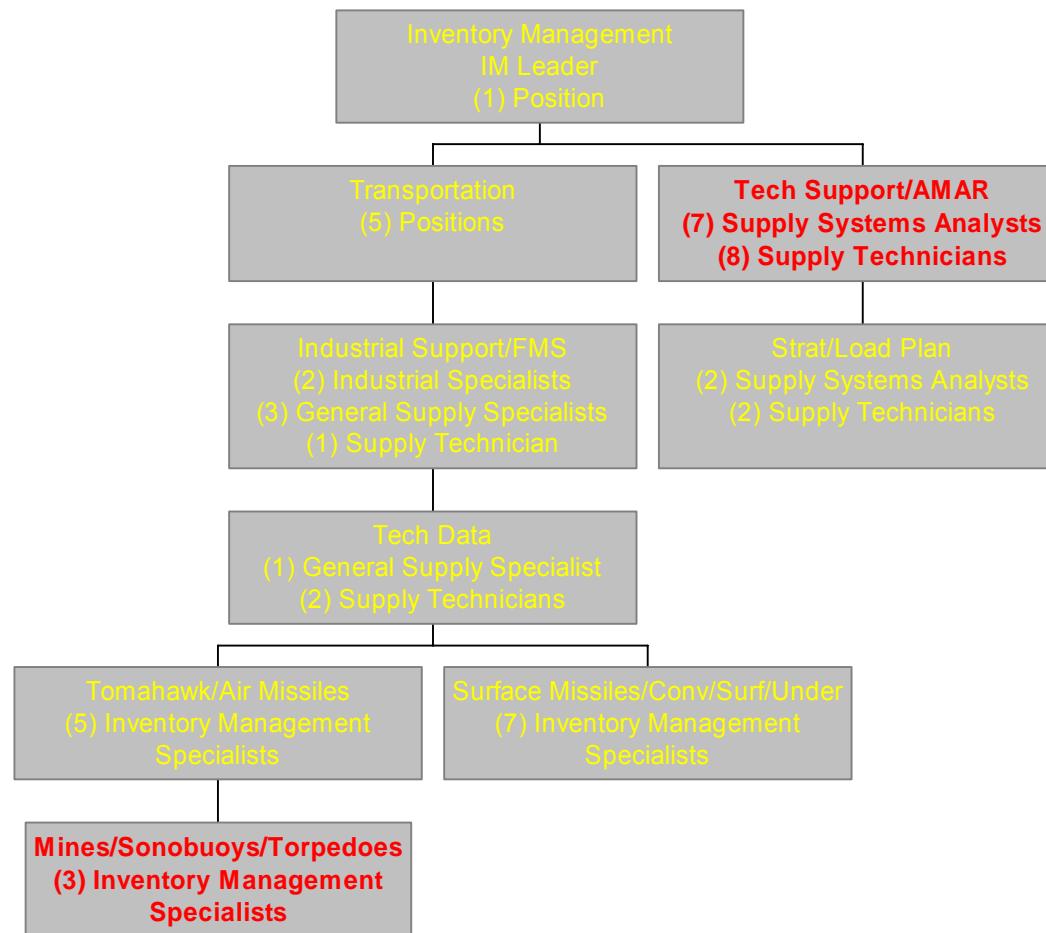
Common ROLMS / ATR Errors, Contd.

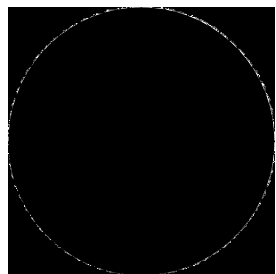
- **FORMAT ERRORS:** ATR kickback errors from CAIMS that were never retransmitted.
 - ATR kickback errors must be retransmitted with assigned CAIMS error sequence number within 90 days.
 - ATR kickback errors not resolved within 90 days must be retransmitted on the next sequential ATR.



NALC Organization (MEO)

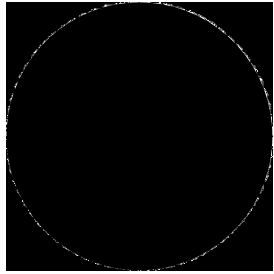
NALC ORGANIZATION





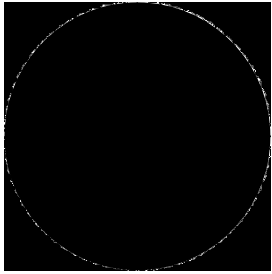
NALC POINTS OF CONTACT

- See Secure Server



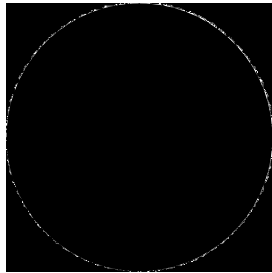
CAIMS OPEN SYSTEMS ENVIRONMENT (OSE)

- Provides the same functionality as the legacy CAIMS.
- Includes approximately 150 enhancements to the legacy system.
- Full capability (updates and retrievals) available 7/25/00.



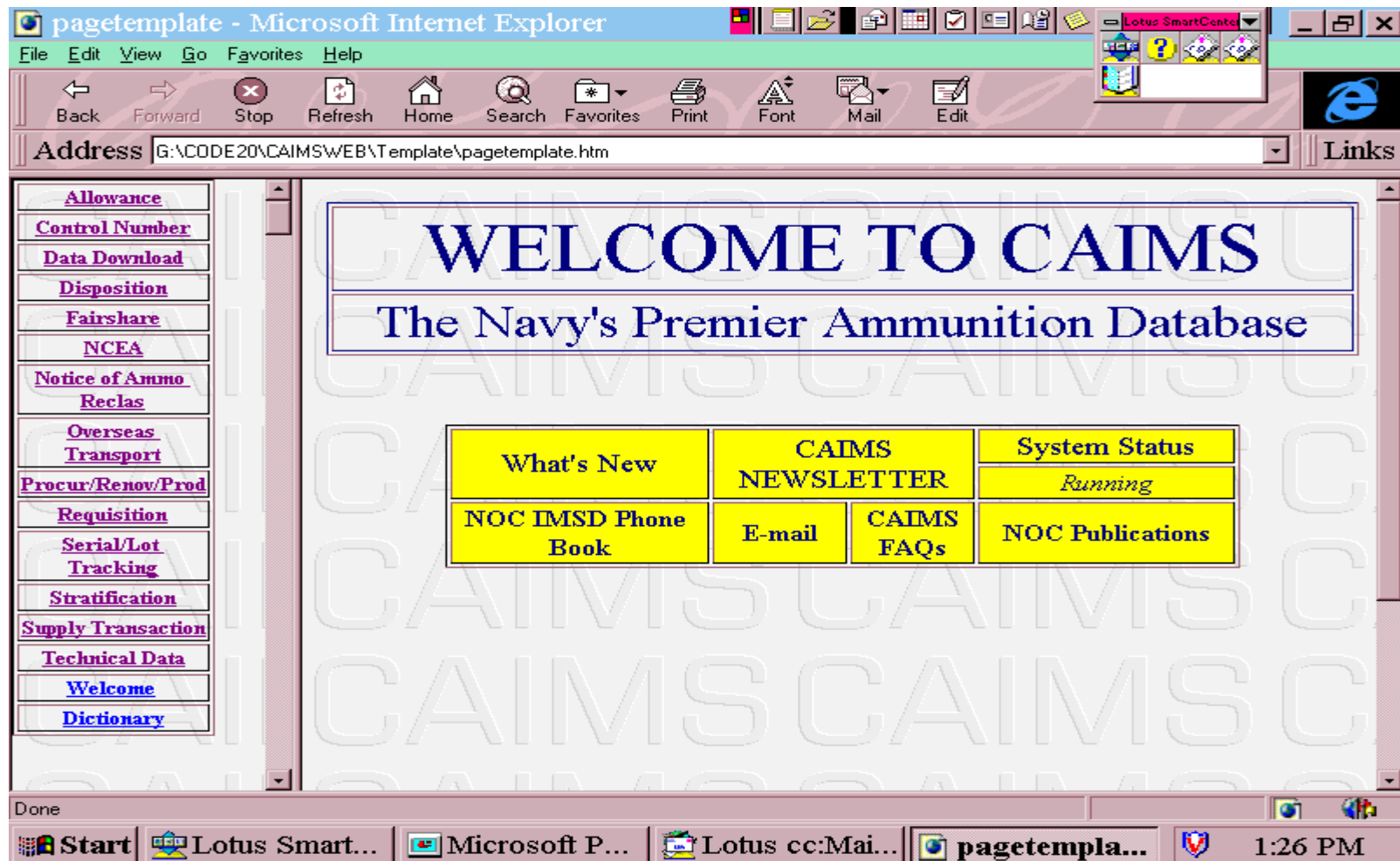
CAIMS OPEN SYSTEMS ENVIRONMENT (OSE)

- Access decision is pending (Either)
 - Confidential Network as currently done with any unique hardware/software requirements to be supplied by the NALC; or
 - SIPERNET
- Provides for much easier and more complete access information.
- Provides for increased use of real-time, online data (i.e., less batch information)



OSE STANDARD

- Menu pages appear in left frame window
- Application pages appear in right frame window



OSE STANDARDS

- Red confidential banners marked top left & bottom right

pagetemplate - Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites Print Font Mail Edit

Address G:\CODE20\CAIMS\WEB\Template\pagetemplate.htm Links

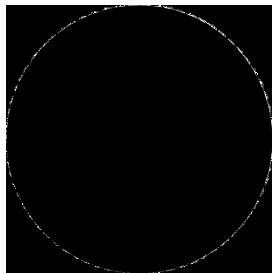
Stratification

[Retrievals](#)
[Maintenance](#)
[Initiate Strat Process](#)
[Help](#)
[Dictionary](#)
[Back to Top](#)

CONFIDENTIAL							
Header Data	Assets Available	Asset Allocation/Dollar Value			Criteria Submission		
REMARKS							
Stratification Number:	P000Z	Year:	1999	LRC:	A0000	Cog:	ZT
NOMENCLATURE							
Missile							
Navy				SpecWar			
PM Remarks							
IM Remarks							
CONFIDENTIAL Classified by OPNAVINST S5513.3B Declassify by OPNAVINST OADR							

Done

Start Lotus S... Microsoft... Lotus cc:... pagetem... 1:52 PM



OSE STANDARDS

- Pages with multi topics have bookmarks

pagetemplate - Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites Print Font Mail Edit

Address G:\CODE20\CAIMSWEB\Ttemplate\pagetemplate.htm

Links

Technical Data

[Retrievals](#)

[Maintenance](#)

[NIIN Establishment](#)

[Data Managers](#)

[Tech Agents](#)

[NIIN Maintenance](#)

[NIIN Alternate/ Preferred](#)

[Activity Data](#)

[Help](#)

[Dictionary](#)

[Back to Top](#)

last update: 12/22/00 10:44:00 AM

[NIIN/Change Notice](#) [Cross Reference](#) [Publication Data](#) [NIIN Alternate/Preferred](#) [Activity Data](#)

NOMENCLATURE COMPARISON

Enter
up to four DODIC/NALCS
or
up to four NIINs
and
Cog Option

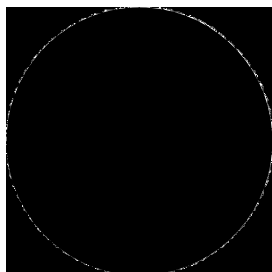
DODIC/NALC: OR NIIN: AND ☒ ALL COGS ☐ OT COG ONLY

Nomenclature Comparison

OR

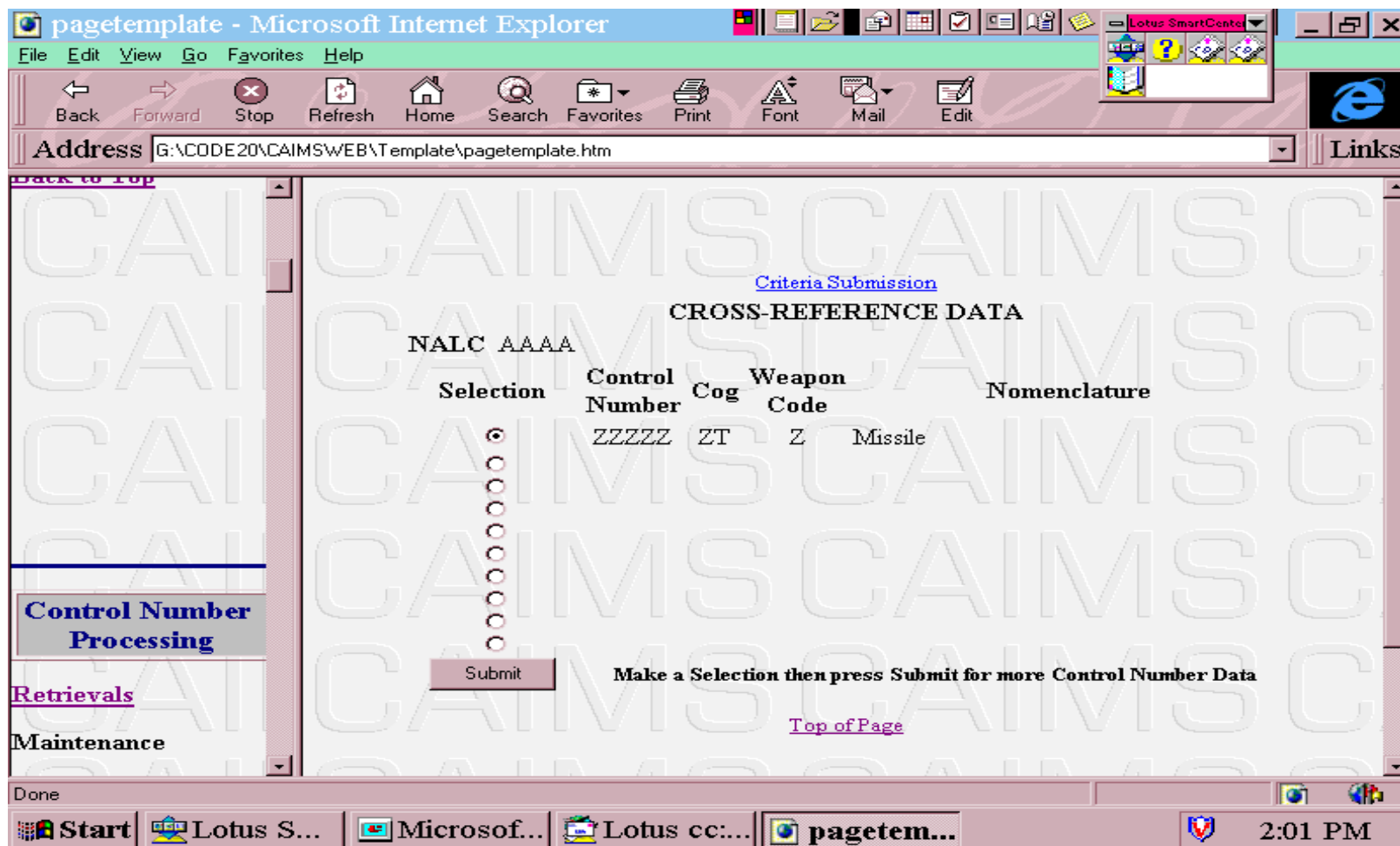
Start Lotus S... Microsoft... Lotus cc:... pagetem...

1:56 PM



OSE STANDARDS

- All pages link to previous page



OSE STANDARDS

- All pages not viewed in full have 'Top of Page' link at bottom of page

pagetemplate - Microsoft Internet Explorer

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Back Forward Stop Refresh Home Search Favorites Print Font Mail Edit

Address G:\CODE20\CAIMS\WEB\Template\pagetemplate.htm

Links

Stratification

[Retrievals](#)
[Maintenance](#)
[Initiate Strat Process](#)
[Help](#)
[Dictionary](#)
[Back to Top](#)

Header Data	Assets Available	Asset Allocation/Dollar Value	Criteria Submission
REMARKS			
Stratification Number:	P000Z	Year: 1999	LRC: A0000 Cog: ZT
NOMENCLATURE			
Missile			
Navy		SpecWar	
PM Remarks			
IM Remarks			
<p>CONFIDENTIAL Classified by OPNAVINST S5513.3B Declassify by OPNAVINST OADR</p>			
Top of Page			

last update:
11/30/98 01:14:29 PM

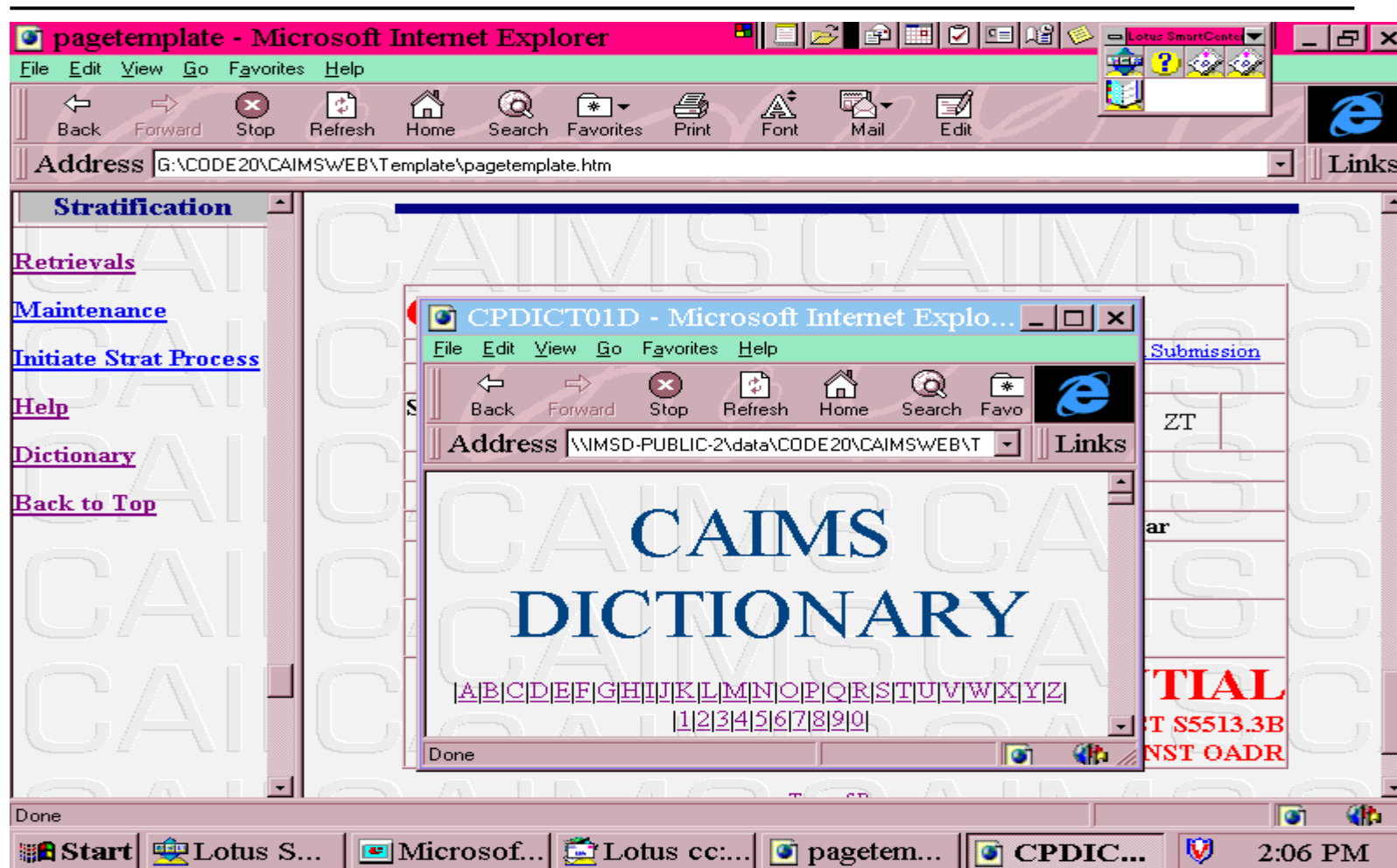
Done

Start Lotus S... Microsof... Lotus cc... pagetem...

2:03 PM

OSE STANDARDS

- Help and Dictionary appear as separate window



OSE STANDARDS

- Topic headers link to their help page

CPSRR02D - Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites Print Font Mail Edit

Address G:\CODE20\CAIMSWEB\Str\cpsrr02d.htm

Links

[Assets Available](#) [Asset Allocation/Dollar Value](#) [Remarks](#) [Criteria Submission](#)

STRATIFICATION RETRIEVALS

STRATIFICATION HEADER DATA

Stratification Number:

Navy

NIINs

More NIINs/NALCs>>

CONFIDENTIAL

Stratification - Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favo

Address \\MMSD-PUBLIC-2\data\CODE20\CAIMSWEB\T

Links

Header Data

This retrieval displays configuration data of the entered Strat Number/NIIN/NALC, its Local Routing Code, Cog and whether or not the Stratification Number has excess material for either Navy, SpecWar or Both. A Stratification Number contains either NALCs or NIINs, but not both.

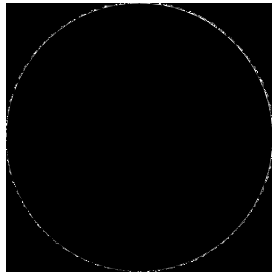
[Stratification Number](#)

[Fiscal Year](#)

[LRC \(Local Routing Code\)](#)

Done

Start Lotus S... Microsoft... Lotus cc:... CPSRR0... Stratific... 2:13 PM



OSE STANDARDS

- Tables are centered - unless due to size, setting to left allows full view of table

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File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites Print Font Mail Edit

Address G:\CODE20\CAIMSWEB\Template\pagetemplate.htm Links

Header	Nomen	Ref Number	Physical	Freight	Criteria	Submission
ORDNANCE PAMPHLET DATA						
Cog: 8T FSC: 1420 NIIN: 014490464 DODIC/NALC: CWGX						
Suppression Code	DOT Class Code	DOT Label Code	DOT Class	DOT Mark/Ship Name Code	Coast Guard Class	Label Pla Code
N						
Government Bill of Lading						
Department of Transportation Container Marking						
UN #	IBD	HazClass/SCG	CAA	COE	EX #	
0349	00	1.4S		NA-97-526		
DOT Exemption	Chemical Agent Group	Multi PSN	EED Eval	HERO Eval	EST Code	
			Y	N	F	
POP Marking						
UN 4H1/Y46/S/**/USA/DOD/NAD						
UN Proper Shipping Name						
ARTICLES, EXPLOSIVE, N.O.S.						
Technical/Chemical Name						

Done

Start Lotus S... Microsof... Lotus cc:... G:\COD...

2:17 PM

Technical Data

Retrievals

Maintenance

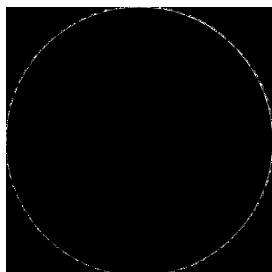
NIIN Establishment

[Data Managers](#)

[Tech Agents](#)

NIIN Maintenance

NIIN Alternate/ Preferred



NALC Web Sites

- NALC WEBSITE:
 - www.nalc.navy.mil
 - password protected
 - contact NALC 717-605-6313 for password
- NALC SIPERNET WEBSITE:
 - ssg.navy.smil.mil
 - password protected
 - contact NALC 717-605-6313 for password
 - email:

Retail Ordnance Logistics Management System (ROLMS)



812-854-5094, DSN 482-5094

E-mail:

Presented to: Sonobuoy Logistics Working Group
03 May 2000



ROLMS Overview

- Training Initiatives
- Automatic Identification Technology (AIT)
- Sonobuoy 2D Label
- Sonobuoy Processes, Software
- Software Plan of Action and PDT7200 schedule
- Customer Support Desk



ROLMS Training Initiatives

- Improved ROLMS DBA Course (CIN J-041-2204)
 - Implemented July 1999 to additionally include:
 - Initial site setup
 - Barcode scanning and processing
 - Periodic Lot Reporting
 - Receipt Diskette Process
 - ATR Retransmittals
 - Pushed Material Due-In Application
 - Pending Transaction Report
 - Receipt NAR Notification Report



ROLMS

Training Initiatives

(cont'd)

- ROLMS Advanced Course (CIN J-042-2205)
 - Plan to pilot July 2000 at Dam Neck
 - Processes to cover:
 - In-depth coverage of “In-transit” ordnance
 - Renov/Maint/Prodn Receipts and Issues
 - Excess Status
 - Advanced Query/Browser Applications
 - Advanced Scanning
 - System Administrator Functions:
 - Daily functions, transaction reporting, access control, loading releases
 - Archiving, error processing/corrections, SALTS
 - Generating reports, Daily Transaction Listing, backups, restores



ROLMS

Training Initiatives

(cont'd)

- CINCLANTFLT Mobile Training
 - ROLMS representatives stationed on East coast
 - Travel to perform onsite Training/Assistance
 - Site Setup, Error Processing, Inventory, Storage
 - Adhoc Query/Browser Tool and Report
 - More In-depth Training on Selected Processes
 - Prototype first 16 Modules May 2000, last 16 Modules August 2000
- Online Tutorial provided with ROLMS
 - 55 exercises covering Allowances, Requisitions, Receipts, Issues, Expenditures, Asset Maintenance, Inventory, Reports, Retrievals



ROLMS

Training Initiatives

(cont'd)

- Future Plans:
 - ROLMS Computer Based Training (CBT) CD
 - Web Based Training with Interactive Features
 - Embedded Training
 - Business Process Driven
 - Pursuing “Ship Rider” teams stationed on each Coast



New AIT Initiatives

- DoD AIT-II Contract DAAB15-99-D-0015
 - Scanner: PDT7200
 - 486 processor, DOS and Windows CE capable
 - 8MB RAM, Virtual Keypad
 - Barcode Printers: Zebra PT400 Portable and S400 Desktop
- PDT7200 Software Conversion completed by Oct 2000
- NALC is developing Computer Based Training (CBT) CD for PDT3500 and PDT7200





Sonobuoy 2D Label



Linear Labels



2D Label





Sonobuoy 2D Label

Encoded Information

- Encoded information will contain Data Elements and ANSI MH10.8.2 Format Data Identifiers/Codes

<u>Data Element</u>	<u>Data Identifier</u>
NSN	N
DODIC/NALC	4R
Condition Code	2R
Ownership Code	7V
Unit of Issue	3Q
Lot Number	1T
Serial Number	S
Quantity	Q
MDD/Expiration Date	6D



Sonobuoy Processes

Utilizing AIT

- Generate “Building” labels for each Squadron UIC
- Create “Buildings” in ROLMS for each Squadron
- Update Address File for each Squadron
 - Add record and/or Allocation UIC for Squadrons
- Scanner External Restow function to scan from locker to Squadron and from Squadron back to locker
 - Assets expended or issued will be left in the Squadron “Building” when evolution is complete



Sonobuoy Software

Issue/Expenditure Program

Q V1.000 -E20S10- N99999 Issue/Expenditure By Location..Create Issue

File Action View Reports/Retrievals Tools Users' Manual

* Bldg/Hold: [xxxxxxxxxxxxxxxx] ? Acept

Type: []

* UIC To: [xxxxxx]

Signal Code: [x] ? Fund Code: [xx] ? [Lot Data]

Apply Clear Reset Close Help

[Key enter data, use Lot Data button to go to new screen to select assets, press Clear to clear data entered, Reset to return to top of screen, Close to exit back to the menu.]



Sonobuoy Software

Issue/Expenditure Program

(cont'd)

Q V1.000 -E20S20- N99999 Issue/Expenditure by Location...Create Issue

File Action View Reports/Retrievals Tools Users' Manual

Bldg/Hold xxxxxxxxxxxxxxxxx

```
-----
DODIC NIIN          Cog ACC C/C Lot/Serial Num          M/E/N Quantity Qty Iss
XXXX XXXXXXXXXXXX XX  X  X XXXXXXXXXXXXXXXXXXXXXXXX XXXX XXXXXXXX XXXXXXXX
(10 lines of data)
XXXX XXXXXXXXXXXX XX  X  X XXXXXXXXXXXXXXXXXXXXXXXX XXXX XXXXXXXX XXXXXXXX
```

Qty Iss/Exp:

Detail Data [x] Generate DD1348-1 [xxxxxxx] L/S Qty xxxxxxxxxxx

Iss/Exp

Select All

Undo

Apply

Clear

Close

Help

[Select desired asset record from window and enter desired quantity, or use Select All button to select the entire quantity available for all records in the window and press the appropriate action button.]



Sonobuoy Software Issue/Expenditure Program Output Report

N99999/NAS SONOBUOY SITE

Date 00048

Issue/Expenditure By Location

Time 11:45:32

Sorted by NALC, NIIN/CC

NALC	NIIN	Cog	Owner	ACC	C/C	Document Num	Quantity
XXXX	XXXXXXXXXX	XX	X	X	X	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
XXXX	XXXXXXXXXX	XX	X	X	X	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
XXXX	XXXXXXXXXX	XX	X	X	X	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
XXXX	XXXXXXXXXX	XX	X	X	X	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX
XXXX	XXXXXXXXXX	XX	X	X	X	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX

>>>END OF REPORT<<<

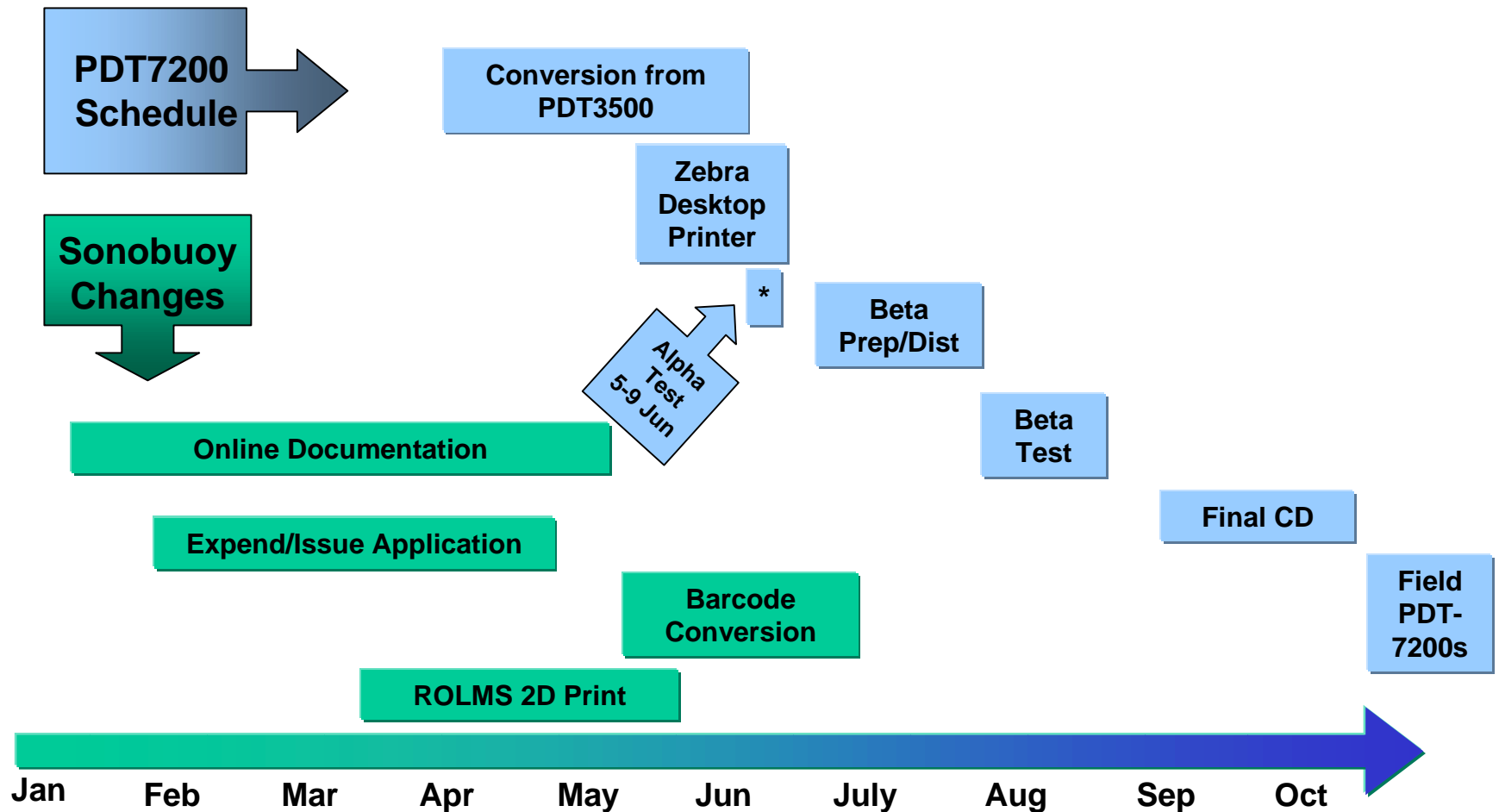


Sonobuoy Software Plan of Action

- Jan-Jun Online Documentation
- Feb-May New Issue and Expenditure Application
 - Automatically generate document numbers and reportable transactions
- Mar-May Modify ROLMS to Print Sonobuoy 2D Label
- May-Jul Scanner Linear-to-2D Barcode Conversion
- Oct 2000 Distribute Software with PDT7200s



ROLMS Sonobuoy AIT Schedule





ROLMS Customer Support Desk

- First Avenue for Immediate Support
 - System/Application Errors, Network/Hardware Problems
 - Processing, Procedural Questions
- Automated Database for Calls, Problems
 - Trend Analysis, Capture Corporate Knowledge
 - By Site, Type of Call, Application, Key Words
- Hours Staffed
 - Sunday: 1700 - 2100 EST
 - Monday - Thursday: 0600 - 2100 EST
 - Friday: 0600 - 1800 EST
 - Voice Mail After Hours
- Customer Support Desk Contact Information
 - 812-854-3957, DSN 482-3957
 - FAX: 812-854-7407, DSN 482-1566
 - E-Mail: help_rolms@crane.navy.mil

Host Level Reporting

Lessons Learned MCBH Kaneohe Bay, HI



COMPATRECONFORPAC

3 May 2000

Sonobuoy Management at CPRFP:

Since NSWC Crane visited in February and shifted all our assets to MALSEK, the paperwork is now more centralized. This has freed up more time for CPRFP to oversee the entire process, instead of being bogged down in the day to day squadron issues.

Problems Still Encountered

Sonobuoy high/low numbers were given to MALSEK prior to NSWC CRANE arriving. MALSEK is experiencing difficulties maintaining assets needed by the squadrons. This problem could be alleviated by drawing our assets from FISC Pearl Harbor instead of San Joaquin,CA.

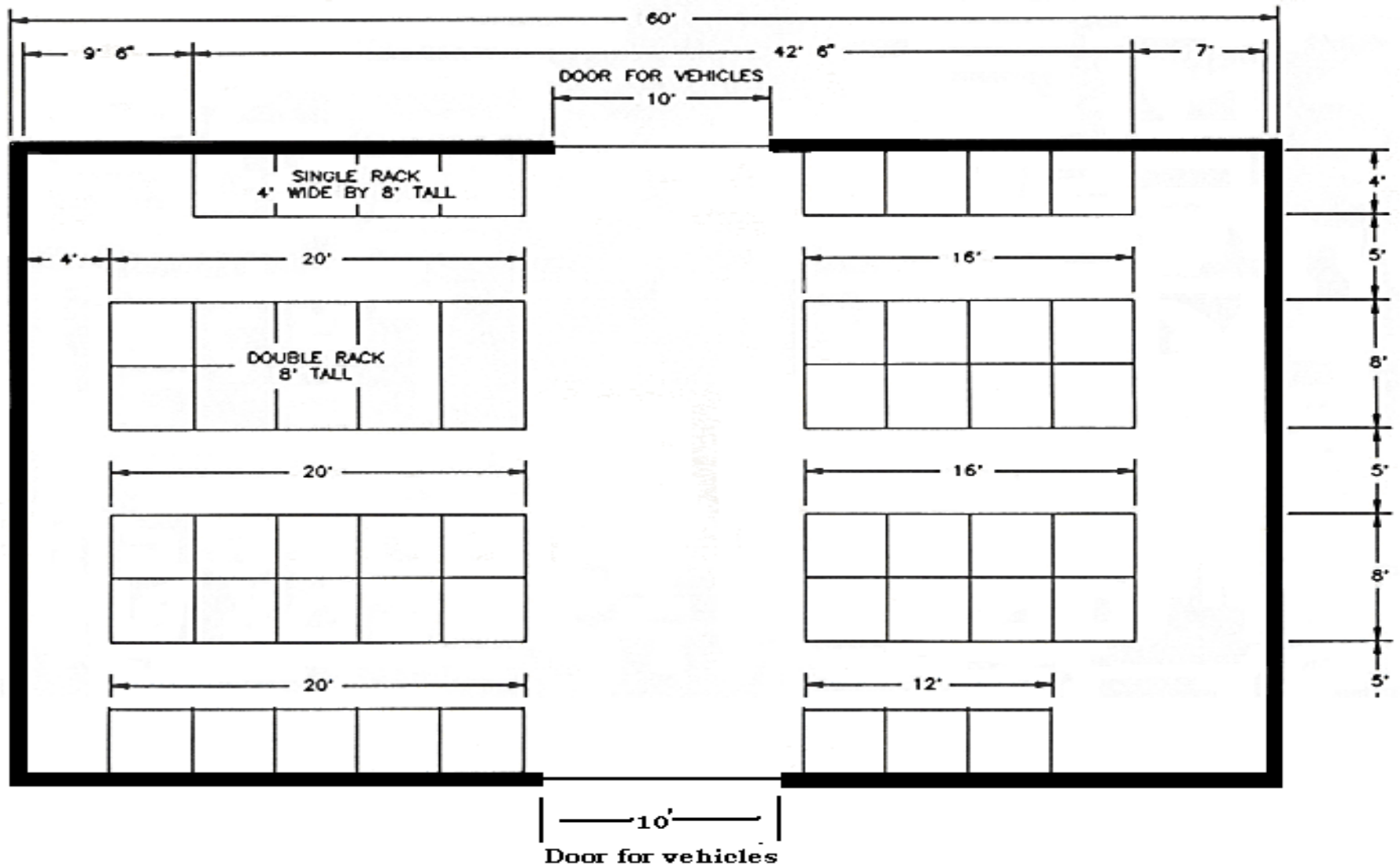
MCBH Kaneohe Bay Sonobuoy Stowage Facility

IAW with the NAVAIR 28-SSQ-500-1

(Sonobuoy Technical Manual).

It is well documented that the storage environment contributes greatly to sonobuoy reliability. Therefore, a suitable building should be allocated as a Centralized Sonobuoy Storage Facility (CSSF) and should be equipped to provide controlled environment for sonobuoy storage and ready issue.

Ideal sonobuoy storage facility IAW Sonobuoy Manual.



Barbers Point Sonobuoy Locker



Kaneohe Bay Sonobuoy Locker

- ★ Locker does not provide adequate storage to support two P-3 squadrons.
- ★ No lighting in area or inside lockers.



Kaneohe Bay Sonobuoy Locker

- ★ Stored in open air.
- ★ Not in secure area to protect them from theft.



Shear Currents



Naval Air Warfare Center
Patuxent River, MD

3 May 2000



Shear Current & Sea States

May 2000
SLWG

Presented by

NAWC-AD

UNCLASSIFIED

Oct 99 SERC Tasking

- Designated operational areas
 - Special interest in littoral regions
- Obtain surface current data
 - Obtain sea state and wind speed data

Oct 99 SERC Tasking

- Obtain subsurface current data
- Apply spec

May 2000 Status

- Designated potential operational areas (8).
- Completed collection and correlation of sea state data and surface current data.
- Obtained limited subsurface current data for two operational areas.
- Awaiting amplifying subsurface current data for remaining areas.

Operational Areas of Interest

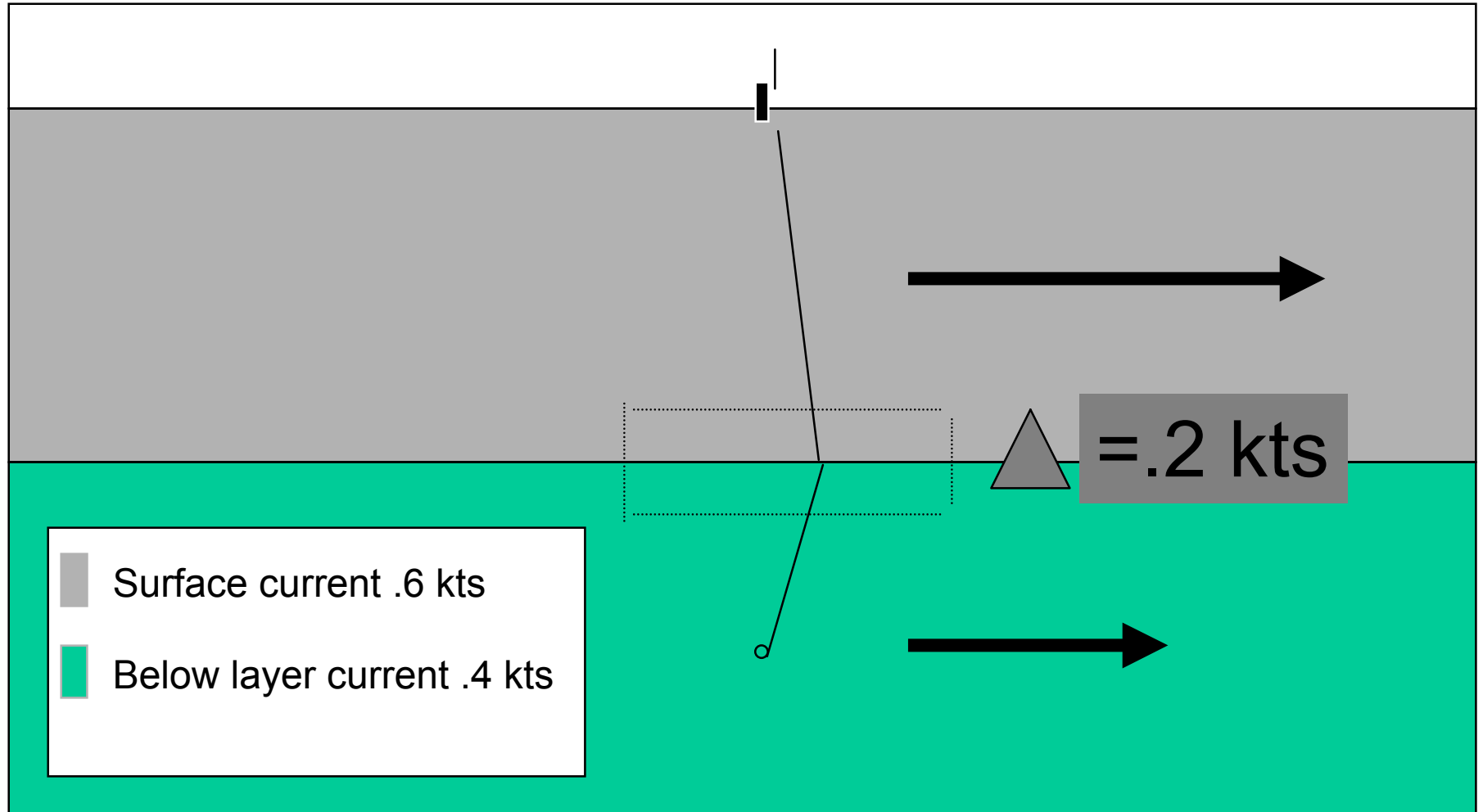
- Sea of Japan
3959N - 13409E
- Gulf of Oman
2431N - 05756E
- Straits of Hormuz
2626N – 05557E
- Straits of Korea
3435N – 12953E
- Other littoral regions
- Formosan Straits
2438N – 11943E
- *Gulf of Alaska*
5442N – 15039W
- *Straits of Gibraltar*
3551N – 00333W
- *GIUK Gap*
5934N – 01803W

Italicized areas have been added

Shear Currents

- Existing Specification OCT 1999
- FF2E Model 90% PROFILE
- 90 ft.= .8 kts
- 1000 ft.= .3 kts

Shear Current (Parallel)



Other Shear Current Examples

- Cross current (opposing directions)
- Fronts & eddies
- Gulf stream/Kurishio current (2-6 kts)
- Tidal currents (Yellow sea/Persian gulf)

Potential Resources

- Naval Air Warfare Center (NAWCAD)
- Navy Meteorological Oceanographic detachment
Patuxent River (METOC)
- National Oceanographic Atmospheric Agency(NOAA)
- Naval Oceanographic Office (NAVOCEANO)
- Research institutes -Massachusetts Institute of
Technology (MIT)

Resources Utilized

- NAWCAD

Harsh environments program reports

30 October 1992 (2)

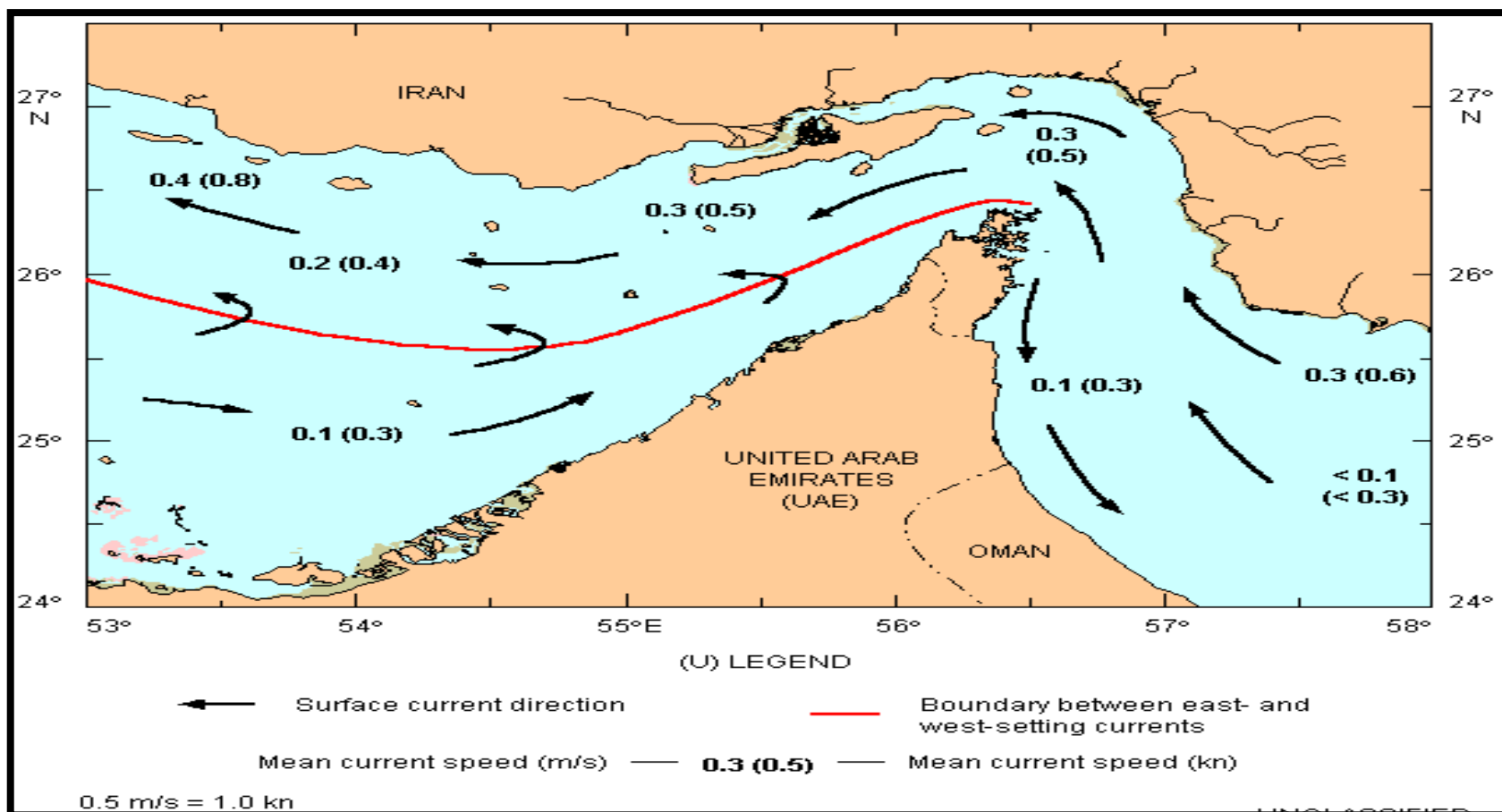
30 December 1992 (2)

31 January 1993 (1)

- METOC

Provided detailed surface current data

Surface Currents for the Straits of Hormuz Summer



Surface Current Data & Sea State Data

- Sea of Japan
- Straits of Korea
- Formosan straits
- GIUK gap
- Gulf of Alaska
- Gulf of Oman
- Straits of Hormuz
- Straits of Gibraltar

WINTER AND SUMMER

Sea State / Wind Speed In Knots

SUMMER

- Sea Of Japan 3/9
- Gulf of Oman 2/8
- Straits of Hormuz 2/9
- Straits of Korea 3/13
- Formosan Straits 3/12
- Gulf of Alaska 4/15
- Straits of Gibraltar 3/12
- GIUK Gap 3/13

WINTER

- Sea of Japan 4/17
- Gulf of Oman 2/10
- Straits of Hormuz 2/10
- Straits of Korea 4/16
- Formosan Straits 5/24
- Gulf of Alaska 5/26
- Straits of Gibraltar 4/16
- GIUK Gap 5/22


Surface & Subsurface Current Data

- Sea of Japan
- Straits of Korea

SUMMER ONLY

Straits of Korea/Sea of Japan


- Summer

<u>Position</u>	<u>surface</u>	<u>90 ft</u>	
3629n/13008e	1.0	.2	.8
3434n/12850e	1.0	.2	.8
3409n/12812e	.8	.1	.7
*3429n/12441e	UNK	.6	UNK
2901n/12653e	.8	.2	.6

* Yellow Sea tidal Current

Straits of Korea/Sea of Japan

- Summer

<u>Position</u>	<u>surface</u>	<u>1000 ft</u>	
3629n/13008e	1.0	.2	.8

Summary

- 1 sample of HEP data reflects a velocity that is greater than allowed for in the 90% profile.
- 2 samples are at the specified upper limit.
- 6 of 8 operational areas still need to be completed for summer (subsurface).
- All 8 areas need to be completed for winter.
- Data for fronts, eddies, or high velocity currents (Gulf Stream/Kurishio) were not analyzed.
- Coupled to both high ambient noise and RFI; littoral currents *could* pose a significant challenge to brown water Air ASW.

FAST AGC PROGRESS

- Received 16 units from Crane. DEC-99
- Analyzed Metrum tape. JAN-00
 - Used for reverberation benchmarking AGC.
- Expended 6 units off JAX during Fleet TACDEVEX 00. FEB-00
 - Analyzing reverberation near field/far field.
- Released 5 units for expenditure during LWAD 00-1. MAR-00

New Action Items

Submitted by Fleet Activities Prior to Spring 2000 Session

- ITEM 00-03: BIT FUNCTION FOR SONOBUOYS
 - USS CARON: No built-in-test (BIT) function for sonobuoys
 - No way to check sonobuoys prior to use
 - Failed sonobuoys impact operations
 - Feasibility of incorporating BIT in sonobuoys
 - Assigned to PMA-264B
 - Status: **OPEN**: Incorporation of BIT in sonobuoys would greatly increase cost of units. EFS Verify function is a good indication of buoy functionality vs age. Most sonobuoy failures are due mechanical failure upon water entry. Discussion.
 - Closing Status: _____

New Action Items

Submitted by Fleet Activities Prior to Spring 2000 Session

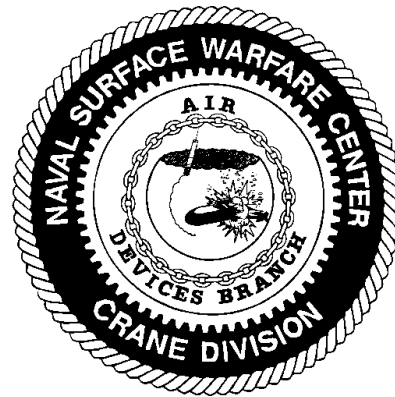
- ITEM 00-04: SONOBUOY AIT ON BOARD SHIP
 - USS CARON: No uniform method exists for maintaining accurate inventory on board ship
 - Physical inventories are manpower intensive
 - No scanner system exists on board ship
 - Undo hardship on crew
 - Assigned to NALC
 - Status: **OPEN**: NSWCC: ROLMS software is available to all Navy ships for ammunition management. ROLMS AIT systems for ships are not being procured by PMA-264. Ship load out probably does not support equipping AIT for small boys. Discussion.
 - Closing Status: _____

New Action Items

Submitted by Fleet Activities Prior to Spring 2000 Session

- ITEM 00-05: SLC DISPOSAL
 - USS CARON: Sonobuoy launch containers (SLC's) are used once
 - SLC's are discarded after buoy launch
 - Reusable SLC's would reduce plastics disposal problems and reduce costs
 - Feasibility of reusing SLC's should be investigated
 - Assigned to PMA-264B
 - Status: **OPEN**: NSWCC: The possibility of reusing SLC's has been investigated more than once. Reuse of SLC's raises safety and reliability issues, not to mention logistics and engineering problems. Past investigations has resulted in negative findings. Discussion.
 - Closing Status: _____

Production Logistics

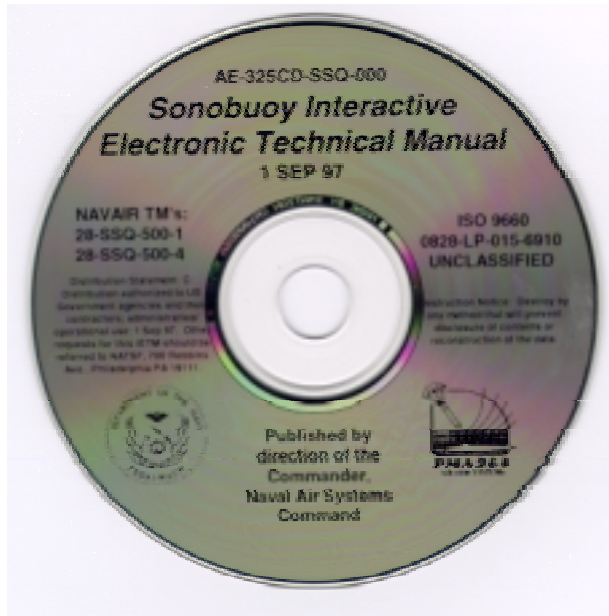


Crane Division,
Naval Surface Warfare Center

Assistance / Help

- Unrestricted Web Site
 - <http://sonobuoy.crane.navy.mil>
 - General Sonobuoy Program Data
 - News, current issues, IETM errata
 - ROLMS Help Page
- Secure Web Site
 - <https://spde.pdmu.crane.navy.mil/IPT264/pma-264/index.cfm>
 - Program Management Data
 - Production Sonobuoy Specifications
 - IETM, ASW Sensor, COPE Reports, etc.
 - USERID & Password required
- *Sonobuoy Hotline*: 812-854-3577 DSN 482-3577

IETM



AE-325CD-SSQ-000

Interactive Electronic Technical Manual (IETM)

Contains:

NAVAIR 28-SSQ-500-1

Sonobuoy Technical Manual

NAVAIR 28-SSQ-500-4

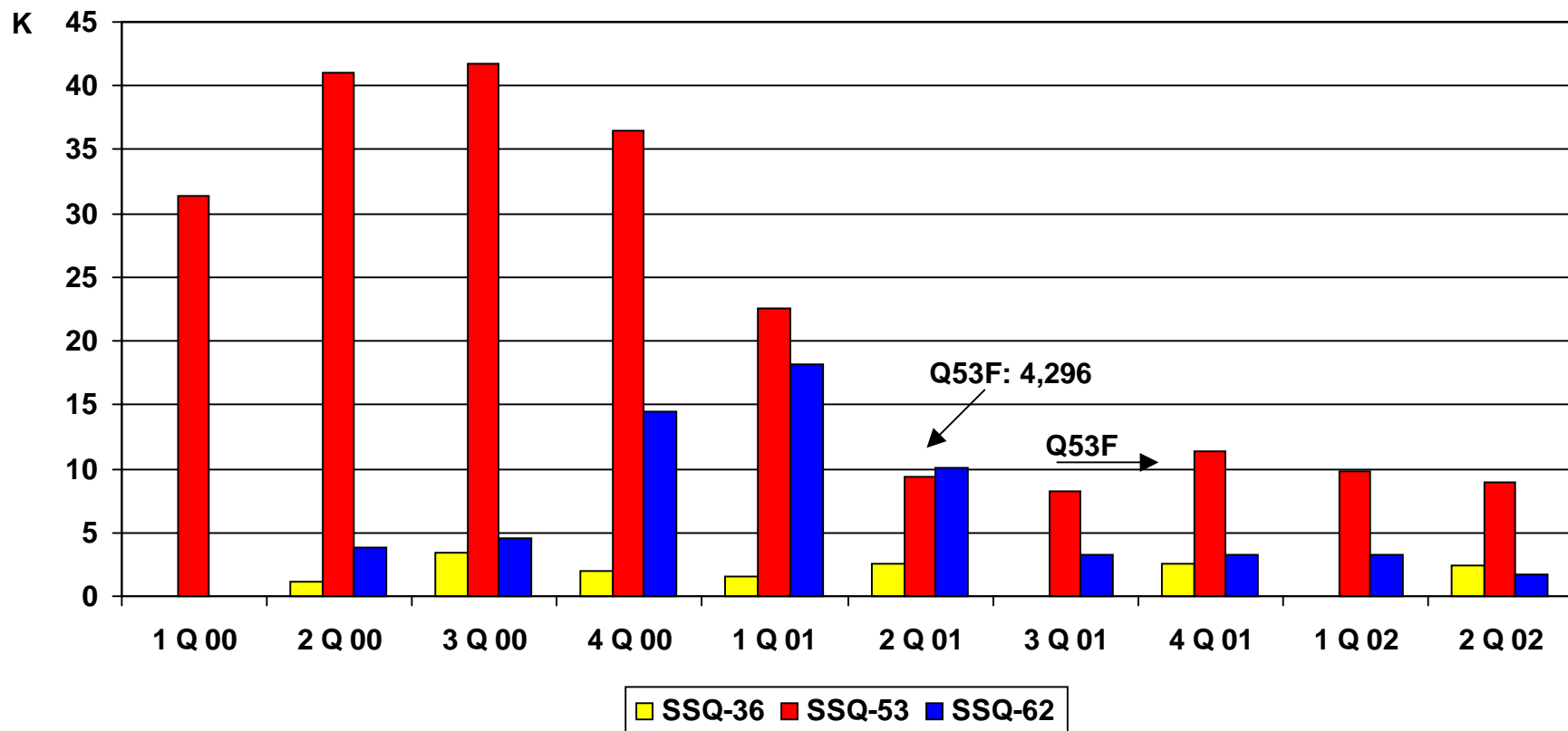
Basic Introduction to Air ASW Acoustic Systems

(Revision 1 being developed; delivery 1 Qtr FY 01)

Current Extensions

- **Current Sonobuoy Service Life Extensions**
 - **Q36:**
 - NALC 8W59: NSWCC 051436Z DEC 97: **10 YEARS**
 - **(Expire 1/96-8/00) NAR to be issued**
 - NALC 8W74: NSWCC 011855Z NOV 95: 7 YEARS (02)
 - **Q53B:** NALC 8W62: **All Expired on 1 OCT 99**
 - **890 units in Diego Garcia still usable until 30 Jul 00; NAR issued**
 - **Q53D:** NALC 8W72: NSWCC 061931Z FEB 98: 10 YEARS (8/00 - 3/03)
 - **Q57B:**
 - NALC 8W70: NSWCC 032301Z DEC 96: **10 YEARS (Expired 2/99-3/00)**
 - NALC 8W73: NSWCC 062002Z DEC 96: 10 YEARS (5/02, **most 9 Years old**)
 - **Q62B:** NALC 8W71: NSWCC 171126Z MAR 95: **6 YEARS (All expired, NAR issued)**
 - **Q77A(CZ):** NALC 8W75: NSWCC 131551Z MAR 98: 10 YEARS (5/01 - 3/02)
 - **Q77B:** NALC 8W76: NSWCC 141900Z APR 98: 10 YEARS (12/01 - 3/02)
 - **Q86:** NALC 8W68: IMSD 111903Z APR 96: 5 YEARS, REFURB (01)
 - **Q110:** NALC 8W77: NSWCC 041505Z JAN 00: 7 YEARS (8/99 - 12/03)

Sonobuoy Deliveries



AN/SSQ-53F

- Combines capabilities of SSQ-57B Calibrated LOFAR and the SSQ-53E DIFAR buoys
 - Deliveries begin in November 2000
 - First deliveries as SSQ-57C, not general Fleet issue
 - EFS Capable
 - Calibrated Omni hydrophone
 - 96 RF Channels, similar to SSQ-53E
 - CFS Capable
 - Can change to/from DIFAR after splash
 - Frequency response: 5 Hz - 25 KHz

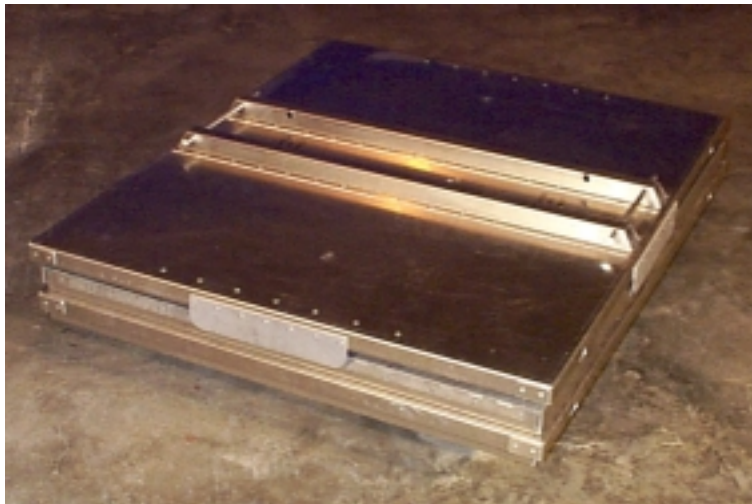
Recent Messages

(Posted on Web Page)

- NAVSURFWARCENDIV CRANE 101630Z FEB 00:
 - Revised instructions on how to set the SSQ-53E EFS
- NAVSURFWARCENDIV CRANE 101632Z FEB 00:
 - Restricts use of sonobuoys removed from their SLC from reinsertion into SLC for CAD launch
- NAVAMMOLOGCEN MECHANICSBURG 301930Z MAR 00:
 - NAR 0422-00:
 - Emergency destruct NAR for AN/SSQ-71, NALC 8W34
- NAVAMMOLOGCEN MECHANICSBURG 191930Z APR 00:
 - NAR 0429-00:
 - Places all stocks of AN/SSQ-62B, NALC 8W71 into material condition code Hotel for disposal due expired service life

CNU-602/E

- Aluminum pallet for AN/SSQ-110 & AN/SSQ-110A sonobuoys (explosive buoys), holds 36 units
 - Designed for shipboard use
 - NALC: BWGG (2E COG)
 - NIIN: 8140-01-454-0524





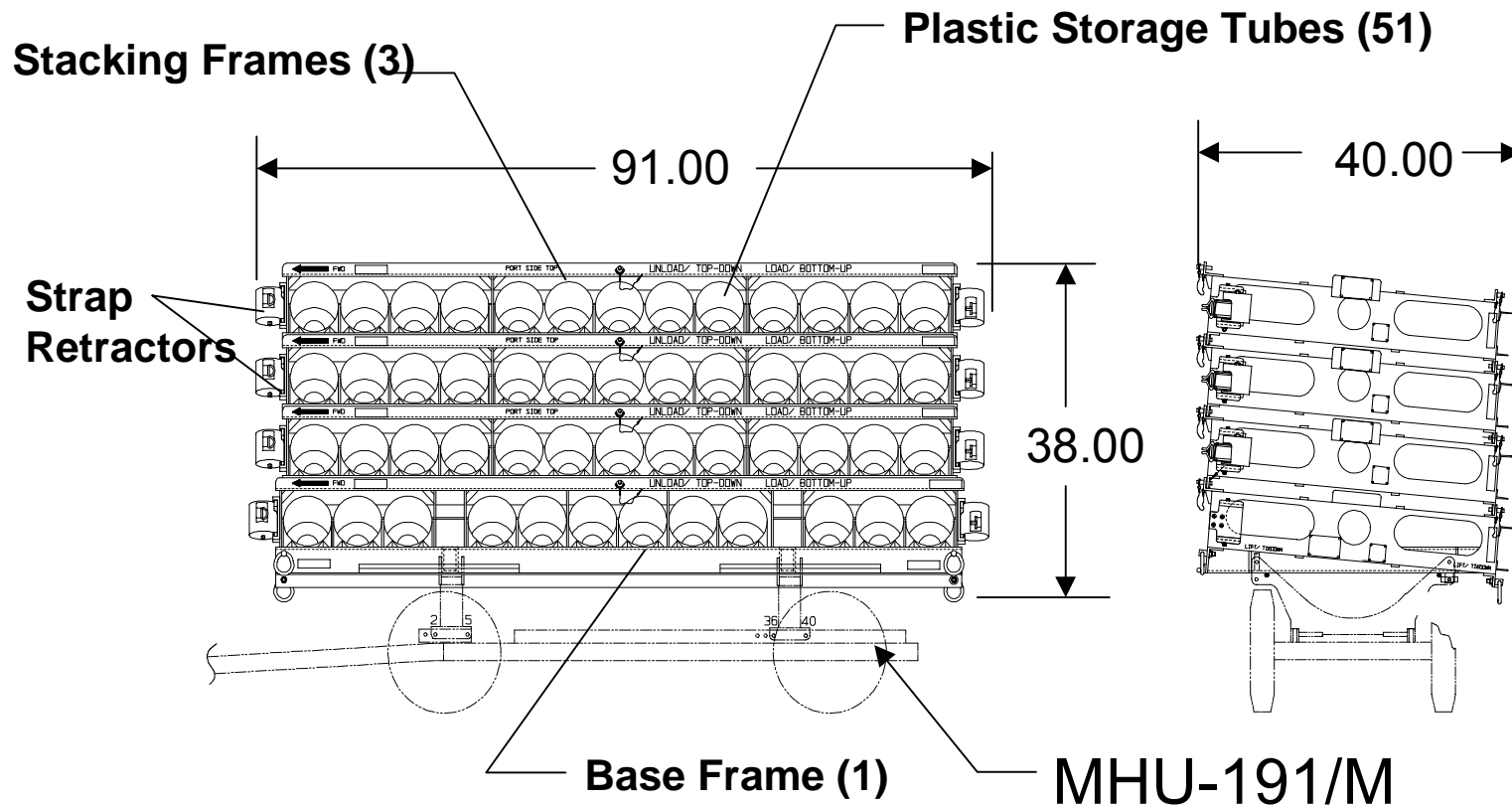
ADU-699A/E SONOBUOY ADAPTER



POC: SSAI Corp.

732-657-2300 x231

ADU-699A/E SHIPBOARD CONFIGURATION



Adapter Configurations

- For shipboard, the planned ADU-699A/E configuration is 1 base frame and 3 stacking frames. The storage capacity of this configuration is 51 buoys.
 - Base frame adapts to AERO 58A adapters
 - Per PMA 264, S-3 shipboard ASW mission diminished
 - Shipboard ASW to be picked up by SH-60R
- The planned shore-based configuration is two ADU-699A/E per MHU-185/E (configuration to be tested).
 - Typical P-3 loadout is 84 buoys, total buoy weight is approximately 2,450 lbs.
 - Each ADU-699A/E estimated weight is 450 Lbs.
 - Configuration does not exceed MHU-185/E 4,000 lb capacity.

Current Status

- The ADU-699A/E prototype (storage capacity of 64 buoys) was evaluated at NAS Brunswick in 1996.
- The ADU-699A/E Prototype is currently aboard CVN 71.
- The adapter is compatible with the AN/SSQ-110 which can be shipped in CNU-602/E (without gray overpacks).

Inventory Objective for year 2001 procurement

Shipboard :

2 adapters per CV/CVN x 12 CV/CVN.....= 24

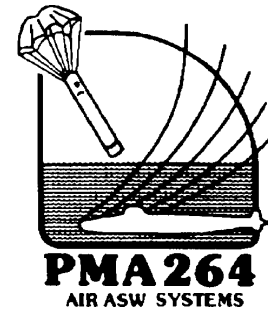
Shore-based:

P-3 (L,P, R) sites.....= 80*

* estimated (to be validated)

Total = 104

Sonobuoy Management Team



Status Report for SLWG

2 - 5 May 2000

History

- CAIMS accuracy of sonobuoy inventory has been inaccurate in the past (< 90% accurate, est 75%)
- Past inventory level of 1,500,000+ units allowed for some inaccuracy
- End of Cold War resulted in lower procurement levels, CAIMS inaccuracy became a real issue
- Sonobuoy Program Manager took steps to improve inventory accuracy and ease logistics management

History

- World-Wide Inventory (WWI) conducted by PMA-264 in January 1994 and October 1995
 - Funded by PMA-264
 - Purpose: To validate CAIMS inventory
 - Jan 94 WWI did not include reconciliation of CAIMS inventory
 - Oct 95 WWI was conducted in cooperation with IMSD personnel who were supposed to reconcile the CAIMS inventory
 - “Amnesty”
 - In both cases, CAIMS inventory accuracy was found to be over 10% in error
 - ‘Unreported Expenditures’ were not captured in either case

Reduction of NIIN's

- PMA-264 took active measures to reduce the number of NALC's and NIIN's associated with in-service sonobuoy stockpile:
 - 1990: 1265 NIIN's 62 NALC's 7 Types
 - 1996: 111 NIIN's 13 NALC's 8 Types
 - 2000: 20 NIIN's 11 NALC's 9 Types
 - 98.4% reduction in NIIN's
 - 82.3% reduction in NALC's
 - Improves ease of reporting
 - Reduces ATR transactions
 - Improves CAIMS accuracy
- Consolidation of types & NIIN reduction an ongoing process

SLWG

- CAIMS Accuracy & Fleet Reporting have been major subjects at SLWG and other meetings since 1990
 - SLWG meets twice a year
 - Representatives from TYCOM, CINC, Squadron, DLA, NALC, AMMO's, PMA, and other Fleet entities
 - N411 / ASN(RD&A) Sonobuoy Management Initiative meetings in 1995 & 96
 - Representative from TYCOM, CINC, NALC, PMA and other Fleet entities
 - PMA-264 Production IPT meetings
 - CAIMS/ATR Subcommittee of SLWG meetings in 1998 & 99
 - Chartered '**Sonobuoy Management Review Team**'

Sonobuoy Management Review Team

Background

- Chartered by Sonobuoy Liaison Working Group (SLWG) in the October 1998 session.
 - Endorsed by CINCPACFLT and CINCLANTFLT as well as various TYCOMs and PMA-264
 - Endorsed by NAVORDCEN IMSD at the January 1999 meeting of the CAIMS/ATR Working Subcommittee of the SLWG
- Purpose: Inspect ammunition transaction reporting processes and reconcile CAIMS accounts at selected sites. Gauge accuracy of CAIMS inventory database for sonobuoys. Improve reporting through reconciliation and training.

Background

- The Navy ammunition inventory manager is NAVAMMOLOGCEN Mechanicsburg, PA.
 - Managed through Conventional Ammunition Integrated Management System (CAIMS)
- Naval activities report ammunition transactions via Ammunition Transaction Report (ATR) using Retail Ordnance Logistics Management System (ROLMS) software.
 - Some activities found doing manual ATR's & needed ROLMS installation and training
 - Local ammunition managers (reporters) found to have little training/experience in ROLMS & Ammo Mgmt

Background

- Lack of training, attention to detail, or tools (ROLMS) results in errors in CAIMS database.
 - ‘Intransits’ = Unmatched transactions, open documents
 - ‘Out-Of-Balance’ = Disagreement between local inventory and CAIMS database
 - Unreported Expenditures & Other Transactions
- Intransits and Unreported Expenditures inflate the CAIMS inventory.
 - Directly impacts procurement of replacement sonobuoys by Program Manager (PMA-264)

Reconciliation Process

1. Install ROLMS if necessary
2. Obtain Master Asset List, Out-Of-Balance list & Unmatched Transactions (Intransit) lists from NALC
3. Adjust ROLMS database to match CAIMS computed-on-hand database, correct negative balances, correct out-of-balances; B&T ATR (Initial reconciliation)
4. Clear Intransits via ATR (with causative research)
5. Physical Inventory
6. Expend/Lose/Gain assets against NCEA based on difference between Physical Inventory and current CAIMS computed-on-hand; B&T ATR (Final reconciliation)
7. Train, train, train
8. Report

Sites Assisted 99-00

- NAVSTA Roosevelt Roads
 - Weps
 - COMNAVSO (UNITAS)
 - TSC
- PATRECONWING ONE
 - Det Kadena & CFAO
 - Det Misawa & Weps
- TSC Keflavik
- NAVO Bay St Louis
- PATRECONWING ELEVEN
 - 3 VP Squadrons
- PATRON 30
- USS CAMDEN
- NAS Sigonella
 - CTG 67.1 / PATRON Sig
- COMHSLWINGLANT
- PATRECONWING FIVE
 - 4 VP Squadrons
- MCBH Kaneohe Bay
 - COMPATRECONFORPAC
 - 4 VP Squadrons, HSL-37
 - MALSEK
- COMPATRECONWING TEN
 - 4 VP Squadrons
- NAS North Island
 - CPRFP Det (TSC)
 - CHSLWP

Results 3/99 - 4/00

TOTALS

SONOBUOYS

OTHER
ORDNANCE

INTRANSITS
CLEARED
(TOT)

EXPENDED, LOST
or GAINED
(TOT)

See Secure Server

Results 3/99 - 4/00

TOTALS

PACFLT

LANTFLT

INTRANSITS
CLEARED
(TOT)

EXPENDED, LOST
or GAINED
(TOT)

See Secure Server

Fleet Improvements

- The Fleet is getting better at reporting
- CINC's fully support Management Team concept & execution
- PACFLT & LANTFLT (AIR) reporting showing great improvements due Assist Team visits & training
- CINCUSNAVEUR activities improving
- COMFIFTHFLT: Who knows? Team to visit when possible
- Indications are that some Surface Forces have significant problems in sonobuoy reporting (& other ammo reporting); particular concern for AOE/TAE reporting accuracy
- Some Weapons Departments have significant problems
 - NAVSTA Roosevelt Roads, NAVACT Guam, etc

ROLMS

- ROLMS works!
- ROLMS system found to be adequate but needed sonobuoy-specific functionality
 - PMA-264 funded ROLMS group to enhance scanner software to allow aircraft on/off-load processing
 - Automatic recognition of expenditures
 - Enhanced location designation
 - ROLMS group to include new software in next build of ROLMS distribution CD
 - Software applicable to all ordnance items
 - Program Office has identified funding for scanners at 'minor' sonobuoy sites (sonobuoy users, ashore); to be distributed/installed/trained later this year & FY 01

Lessons Learned

- Some activities are ignorant of reporting responsibilities and processes
 - Untrained personnel
 - ROLMS not installed; ROLMS corrupt; ROLMS not used
 - Unmotivated personnel
 - Little or no Command Oversight / Command Concern
- NCEA Process not understood
 - Derivation of Allocation
 - Importance of reporting transactions, particularly expenditures
 - Daily or monthly expenditure reports (TANS) wrong
 - Cumbersome in some activities
- ROLMS Training insufficient
- Little or no coordination between sites
 - Aircraft movement between detachment sites not reported

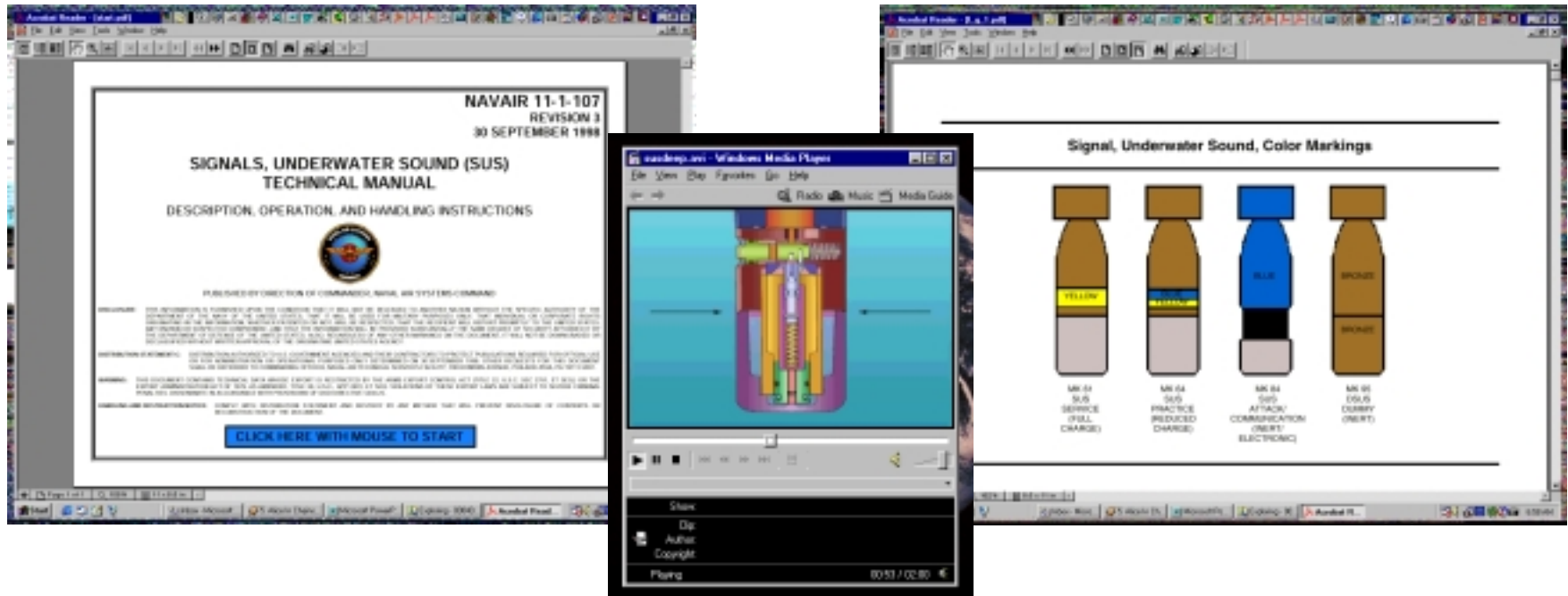
Lessons Learned

- Sonobuoy Ready Issue Locker mismanagement
 - Little or no security
 - Dirty, unorganized
- Off-line ATR's being done
 - ROLMS generated ATR's being modified without changing ROLMS database
 - Manual ATR's being done; not using ROLMS
 - Managers do not realize impact of doing manual ATR's
- Sites not using CAIMS UIC Technicians to reconcile errors
 - NALC Mechanicsburg UIC technicians ready to help
- ROLMS Help Desk not used
 - Bugs or problems with ROLMS must be reported to ROLMS help desk to insure 'fixes' are programmed

Management Review Team Schedule

- Sonobuoy Management Review Team to continue operation. Will visit select major consumer sites for reconciliation. Tentative schedule:
 - SLWG - NAS Jacksonville - 2 May 00
 - USS JFK BG - May/June 00
 - Ammunition Logistics Forum, NALC - 20 Jun 00
 - NAVSTA Roosevelt Roads - Summer 00
 - NSF Dodge/PW1 Japan/FISC Yokosuka - Summer/Fall 00
 - NAS Mayport, Misc. Jax Sqdns/CSCWL, Summer 00
 - NAWC Patuxent River & VX-1 - 00
 - FISC Pearl Harbor - 00
 - Begin AIT Installs & Training - Fall 00

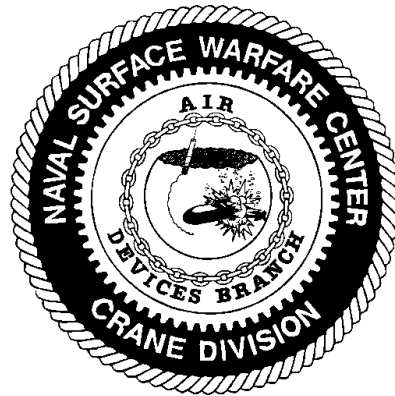
SUS IETM



Yorktown Det, NSWCC

757-887-4783

Sonobuoy Engineering



Crane Division,
Naval Surface Warfare Center

812-854-2008

Sonobuoy Engineering



- Requirements Definition
- Specification Generation
- Acquisition Support
- Performance Testing
- Acceptance Testing
- Fleet Support

Sonobuoy Engineering Review Committee



- **IPT-wide forum for discussion and definition of Sonobuoy Requirements.**
- **Support/review specification revisions for production sonobuoy ECP/upgrades.**
- **Support/review specifications for new R&D sonobuoy types.**
- **Manage resolution of sensor problems reported by fleet/other activities**
- **Provide impact assessment/identify integration issues for aircraft, ASWM, TSC, and ILS for new or upgraded buoy systems.**

SERC, Contd.



- **Membership: Air 4.5.1.3 Air ASW Class Desk (Co-chair - Eng.), PMA-264B (Co-Chair - M'gmt); PMA-264C (R&D), N880E2 (); NAWC Pax FAST Leader, Air T&E rep, Integration Rep; NSWC Crane Prod. Engr., Prod. T&E, ILS Manager**
- **Meets Quarterly**
- **Looking to add representation from the CINC's.**

Production Sonobuoy Specification (PSS)



- Consolidated performance specification for all Production Sonobuoys (ex. Q-110 series).
- Initial acquisition use: FY-96
- Revised annually as required for corrections/improvements and ECP's.
- Included are 8 Appendices for SLC's, pallets, parachute system, marking, QA, CFS, EMI, and HERO.
- **FY 00 PSS: Q-36B, 53E, 53F, 62E, 77B, 86, 101**

Sonobuoy Acquisition Support



- Sonobuoy Engineers support the Program Office (PMA-264) and Contracting Authorities in preparing contract requirements and specifications and evaluating bids/proposals.
- Provide ongoing technical support during contract execution. Serve as Contracting Officer's Representatives.
- Interact with Test Group to resolve technical issues as required.

Design Qualification Testing



- Each new sonobuoy design by each sonobuoy manufacturer must be evaluated to ensure compliance with the performance specification prior to production approval.
- Testing includes safety tests (aircraft launch, HERO, battery, ESD), laboratory tests at NSWC Crane and ocean air drop tests at the Sonobuoy Test Site - San Clemente Island, CA.

Production Sonobuoy Acceptance Testing



- Annual production runs of each sonobuoy are broken into lots. Each lot is typically 1200 to 2400 buoys. Each lot is randomly sampled for 32 test units. Test units are shipped to the SCI Test Site for air drop testing to ensure 90%+ reliability and performance compliance.
- NSWCC Crane Test Group conduct tests.
- Assets include R/V Acoustic Explorer and UC-12B Air ASW Test support aircraft.





UC-12B Air ASW Test Support Aircraft



- Affordable Readiness Funded Project
- Provide reliable low cost aircraft support for Program ocean air drop testing.
- Project supported IPT-wide
- Aircraft Modified by Aeromet, Inc., Tulsa, OK
- Operational Testing by VX-1, Pax River
- In Service - Jan 2000

Fleet Support



- Support Sonobuoy ILS manager in resolving Fleet sonobuoy technical issues.
- Attend SLWG's and provide support to resolve sonobuoy technical issues.
- Support Hotline call resolution on technical issues.
- Support MNS/fleet requests for changes to buoys via SERC and Program Office.

Setting the SSQ-53E



- EFS Setting of the Q-53E is an issue.
- In addition to settings of the Q-53D, Channel, Life, and Depth, there are two new settings: Sensor and AGC.
- Buoy has short cut to skip the new settings. Hit verify after setting Channel, Life and Depth.
- Use of 'shortcut' NOT RECOMMENDED.
- Buoy will use previous setting of buoy for Sensor and AGC, if shortcut is used.

SSQ-53E, Contd.



- If previous settings are unknown, using shortcut will result in unknown setting of Sensor and AGC modes.
- Therefore, it is best to set all five selections.

Q-57C ➡ Q-53F



- FY-99 Contracts to Develop and Qualify a replacement for the Q-57B (Designated the SSQ-57C)
- Engineering study determined that a combined Q-53E/Calibrated OMNI sonobuoy was feasible and cost effective.
- Only ~800 FY-99 Q-57C units will be produced.
- The Q-57C and the Q-53F are the same design.
- FY-00 Q-53E and Calibrated OMNI production awarded as the Q-53F production.

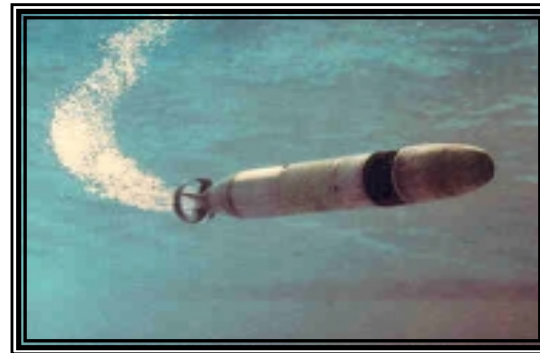
Q-57C ➡ Q-53F



- Q-53F/Q-57C will have a third Sensor mode:
CALIBRATED OMNI (CO)
EFS Sensor Settings: dF - DIFAR, CS - Constant Shallow Omni, CO - Calibrated Omni
- Calibrated Omni sensor package deploys along with DIFAR sensor package to selected depth.
- dF/CS/CO will be controllable by CFS commands.



Mk 39 Expendable Mobile ASW Training Target



Expendable Targets Brief

PMS 403

MK 39 EMATT

- Mk 39 EMATT Mission
- Mk 39 EMATT History
- MK 39 EMATT Mod 0 Characteristics
- EMATT Mod 0 to Mod 1 Upgrades
- Mk 39 EMATT Mod 1 Program
- Mod 1 Advantages
- Mod 1 Availability and Distribution
- EMATT Derivatives
 - Improved Mk 39 EMATT Mod 1
 - 3-8 knots
 - User / Field Programmable

Mk 39 EMATT POCs

- PMS 403 Program Manager:
703-604-6052 X555
- Fleet Liaison:
703-604-6052 X549
- NUWC Division Newport Code 8222:
Technical Support
 - - Engineering Manager 401-832-1682
 - - Senior Project Engineer 401-832-1670

Mk 39 EMATT Mission

The Mk 39 EMATT is a low cost, open ocean ASW training target developed for the US surface and air navy.

The Mk 39 is delivered to the fleet packaged in a SLC with a parachute assembly which allows for air launch from all ASW equipped aircraft, fixed and rotary winged. Removal of the parachute assemble allows for deck launch from ASW ships.

With the addition of a Mk 72/84 tracking pinger electronics board, the EMATT can support R&D and fleet training exercises at any of the navy's undersea ranges.

Mk 39 EMATT History

- **1985** NUWC Became TDA for Mk 39 EMATT Program
- **1985-1991** EDM Phase
- **1991** Low Rate Initial Production / 3500 units / Sippican Inc.
- **1993** Full Production Contract / 8315 units / Sechan Elec.
- **1995-1997** Engineering Upgrade Program / Sippican Inc.
- **1997** Follow-on Production Contract / 1000 units / Sippican.
- **1999** Delivery to fleet of Mod 1 EMATT-4th quarter FY '99

Mk 39 EMATT Mod 0

- Speed: 8 Knots
- Depth: 75-600 feet
- Endurance: 3 hours
- Launch Mode:
Air or Surface
- Programmability:
22 Heading / Depth
Segments
- Transponder for Mk 46
- Echo Repeater for All US
Sonars (3-13.5 Khz)
- Passive Sonar: 4 Tonals
450, 600, 720, & 900 HZ
- MAD Function Selectable
- Mk 84 or Mk 72 Pinger
Available as Add on Board

Production Cost: \$ \$4000 / unit
COST TO END USER \$0000!!!!

Mk 39 EMATT Upgrades EMATT MOD 0 to MOD 1

- Advanced Torpedo Upgrade
- Programmable Tonal Levels
- Autonomous Evasion Maneuver
- Integrated Range Tracking Pinger
- Improved Safety Circuit
- High Reliability SMD Electronic Processor
- Single Ring Tonal Transducer
- Improved Active Sonar Performance

Mk 39 EMATT Mod 1

- Speed: 8 Knots
- Depth: 75-600 feet
- Endurance: 3 hours
- Launch Mode: Air or Surface
- Programmability:
 - 22 Headings/Depths & Tonal Amplitude
- Echo Repeater for All US Sonars (3-13.5 Khz) and Torpedoes
- Autonomous Evasion
- Passive Sonar: 4 Tonals
 - 450, 600, 720, & 900 HZ
- MAD Function Selectable
- Mk 84 or Mk 72 Pinger

Production Cost: \$2449 / unit
Cost to end user: \$0000/unit

Mk 39 EMATT Mod 1

Echo Repeat Function-Torpedo & Sonar

Sonar Echo Repeater

- Frequency: 3-13.5 KHZ
- Pulses: 28-180 msec
- Amplitude: 10 dB TS up to 170 dB
- Rep rate: 1 pulse/sec
- Echo delay: 180 msec
- Minimum Detectable Level: 130-135 dB

Torpedo Echo Repeater

- Frequency: All US Torpedo Systems Inclusive
- Pulse widths: Tailored to Each Weapon
- Amplitude: Fixed output-170 dB
- Rep Rate: Weapon Dependent (.5, 1.0, & 2.0 PPS)
- Transmitted Waveform: Rectangular with Frequency Fidelity Maintained (true doppler)
- Minimum Detectable Level: 140-146 dB

Mk 39 EMATT

Programmable Tonal Levels

- **Attenuation Programmable in 3 dB Increments Up To 24 dB from 130dB**
- **Can Be Set at Different Attenuation Levels During Exercise**
- **Amplitude of 4 Tonals Programmable as Group**
- **1 Tonal Transducer Removed as Cost Saving**
- **Tonal Amplitude Can Be Modified During Autonomous Evasion Maneuver**
- **Fleet Delivered Units Programmed for 0 dB, 6 dB and 9 dB**

MK 39 EMATT

Autonomous Evasion

- **Cued By Active Sonar Emissions**
- **Number of Emissions and Capture Duration Is Programmable**
- **Returns to Original Profile after Maneuver**
- **Each Evasion can have 10 Segments**
 - Heading
 - Depth(shallow to deep or deep to shallow)
 - Tonal output level can change

Mk 39 EMATT Mod 1

Range Tracking Pinger Function

- Programmed at Factory
- Capability for Mk 84 or Mk 72 Pinger Type
- Activates When Unit Turns ON
- All Fleet Issued EMATT Mod 1s will have Mk 84 Activated
 - Will not interfere with other functions
 - Set for 1 ping every 2 seconds
 - ID pinger code will be provided with target informational paperwork

Mk 39 EMATT / Fleet Feedback

- Fleet Reports 89% Success with EMATT Mod 0
- Has Been Employed in All Oceans
- Used in Numerous Multi-National Exercises
- Configured “Special” EMATTs for Fleet
 - Shallow water targets
 - Custom Dynamic Profiles / shallow water

Mk 39 EMATT

Production Lot Acceptance Testing

- Conducted at SCORE Range
- EMATT Acceptance Testing Coordinated with Mk 30 IMA to Achieve maximum target utilization for Fleet Support
- EMATT Serves as backup target for Mk 30 when rough weather precludes recovery
- Tests Serves Several Purposes
 - Lot Acceptance Testing
 - Fleet Training
 - EMATT Performance Feedback

Mk 39 EMATT Mod 1 Advantages

- Cost: \$2449
- Approved for In-Stratum Operation w/ Hardened SSNs
- Shallow Water Capable
- Compatible with Mk 48 & Mk 46
- Dynamics and PNB Amplitude Programmable
- Tracking Pinger Available for Range Operations
- Autonomous Evasion
- Improved Active Sonar Response

Mk 39 EMATT Mod 1

Availability & Distribution

- First Units Available in Aug 1999
- Supply Points: NWSs- Seal Beach and Yorktown
- EMATT Mod 1 National Stock #: 6920-01456-4753
- NALC: CWIE
- Inventory Control Point: NOC IMSD Code 43
 - Information: Pam Bruce Tel: 717-605-3606

EMATT Program Manager PMS 403 Issued Message with Guidance to Fleet on Distribution and Availability

-Use Mod 0 if Mod 1 Capabilities are Not Required

-Mod 1 Available if the following Capabilities are Required:

Mk 48 & Mk 50 Torpedo Functions

Reduced Tonal Levels

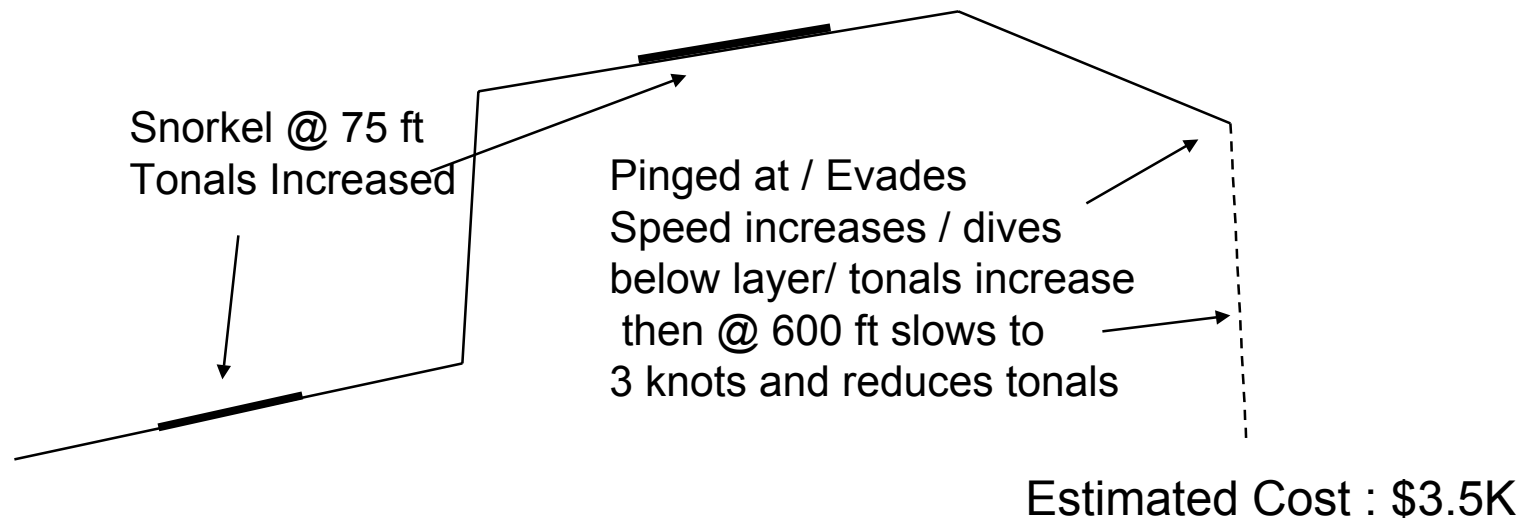
Autonomous Evasion

Tracking Pinger for Range OPs

Improved MK 39 EMATT Mod 1

- MK 39 Mod 1 Features Plus:
 - Multi-Speed: 3-8 knots / Endurance: 3-6 hours
 - Field Programmer: User can program target based on environment and tactical training requirements

Slow Patrolling Diesel (3 knots @ 225 feet /Layer @ 280 feet)



SUBMATT

Submarine Launched Mobile Acoustic Training Target

(Sippican Inc.. COTS item)

- **Speed:** 3 & 8 knots
- **Depth:** 75-600 ft
- **Endurance:** 2.5 - 3.5 hours
- **Launch mode:** Submarine TDU 450, 600, 720, & 900 Hz
- **Programmability:** MK 72 or MK 84 pinger 22 Hding/depth & tonal amplitude
- **Estimated cost:** \$8-10K
- ER for all US sonars and torpedoes
- Autonomous evasion
- **Passive sonar:** 4 tonals

** Field Programmer available for this product*

PROGRAM STATUS:

- 6 SUBMATTs purchased by SUBLANT for evaluation
- 1 tested to date / successful exercise with ADCAP - December 1997
- NAVSEA approval of TDU Launch Procedures
- DEVRON 12 Developing Test Plan for remaining 5 SUBMATTs

SEAMATT

(High Realism EMATT)

- Commercial product developed by Sechan Inc..
- DSP based system
- MK 39 EMATT Mod 1 capabilities plus
 - Multispeed 4-8 knots
 - Dive/climb/turn rates programmable
 - Acoustics fully programmable (TS, BW & tonals)
 - Low frequency transducer 100-1000 Hz
 - Recording system option
 - Externally programmable through IR port w/ laptop computer
 - Shallow water MK 84 pinger format available
 - Estimated cost: \$6K

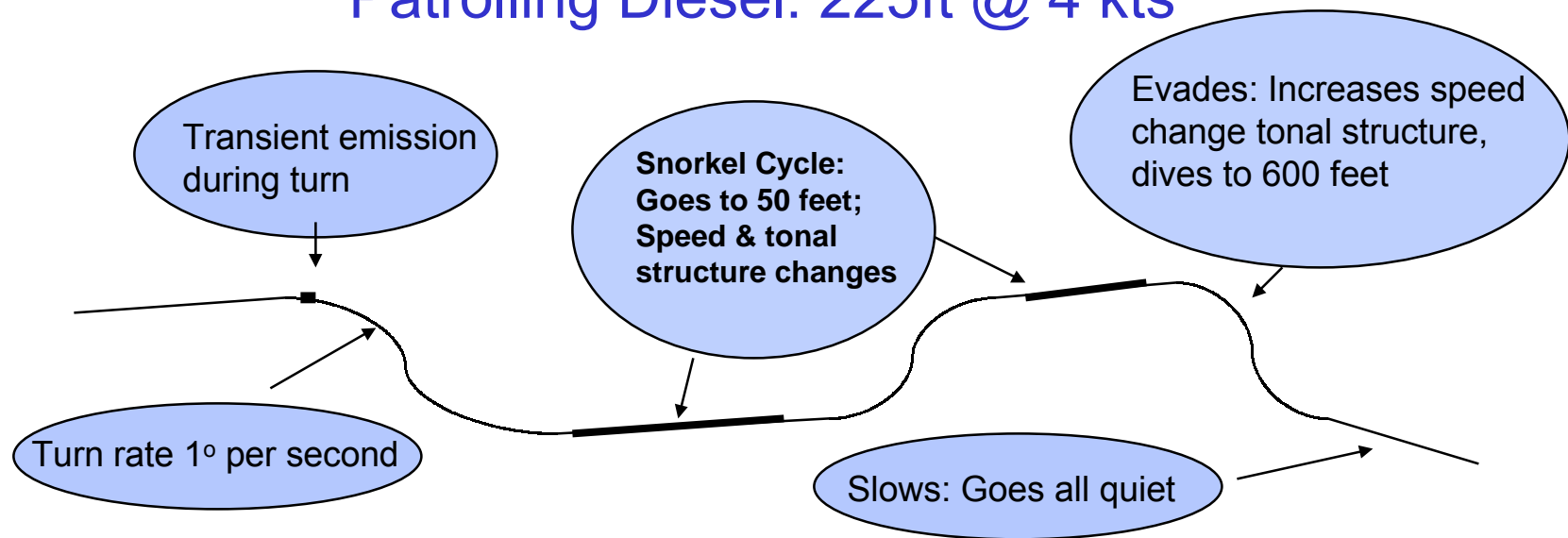
PROGRAM STATUS:

- 50 SEAMATTs built to date for Demo & Eng Eval at PTS Range & SCORE/Tanner bank area.
- SEAMATT processor board available for upgrade/backfit to Mod 0 EMATTs
- 14 SEAMATTs available for evaluation

SEAMATT Scenario

- Speeds: 4-8 knots
- Tonals: Multiple families of lines per run / linked to dynamics
- BBN & Transients
- Dynamics: Realistic turn rates
- User Programmable
- Initial Cost: \$6K

Patrolling Diesel: 225ft @ 4 kts



Review / Discussion

New Action Items